



STOUT

UNIVERSITY OF WISCONSIN

The School of Choice for the 21st Century

Undergraduate Bulletin
1993 – 1995

Undergraduate Bulletin



University of Wisconsin-Stout Menomonie, Wisconsin

An Equal Opportunity and Affirmative Action University

North Central Association of Colleges and Secondary Schools • National Council for Accreditation of Teacher Education

The Undergraduate Bulletin was prepared according to the best information available as of July 1993. All information regarding fees, admission, graduation requirements and course offerings is subject to change.

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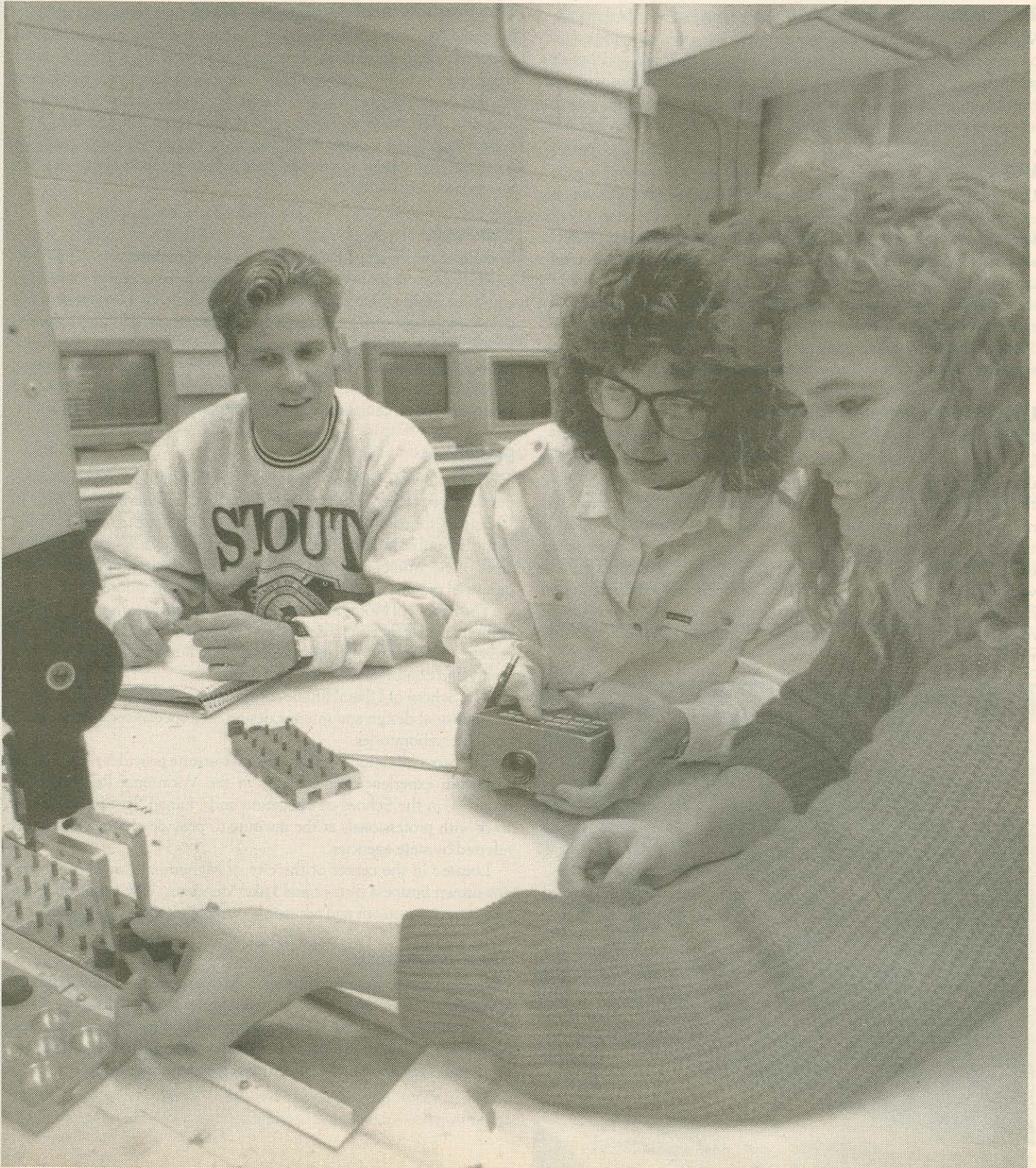
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General Information



THE UNIVERSITY

To Prospective Students

Welcome to UW-Stout! This bulletin describes programs and courses offered by the university. It provides fee, financial aid and housing information. We invite you to visit the campus. Discussions with staff members may help you reach your decision. If possible, write or call for an appointment to visit UW-Stout. The number is 1 800 44 STOUT.

UW-Stout

UW-Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1891 by James H. Stout. A Menomonie industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, UW-Stout has gained a position of national leadership in its specialized areas. Although UW-Stout is a career-oriented university, the humanities, social and natural sciences are key parts of the total educational program.

UW-Stout's Special Mission

UW-Stout, as a special mission institution, serves a unique role in the University of Wisconsin System. UW-Stout is characterized by a distinctive array of programs leading to professional careers focused on the needs of society. An undergraduate degree in manufacturing engineering, and undergraduate and graduate degrees in the study of technology, applied science, art, industrial management, human behavior, and home economics are presented through an approach to learning which involves integration of theory, practice and experimentation. Extending UW-Stout's mission into the future requires that instruction, research and public service programs be adapted and modified as the needs of society change.



The Faculty and Academic Staff

Because UW-Stout has specialized in certain areas, we have developed a staff of individuals nationally recognized in their fields. All classes are taught by the faculty and academic staff except for a small number of laboratory courses which are taught by highly qualified graduate assistants. The student-teacher ratio is about 20:1. Of a staff of 435, approximately 50 percent hold doctorates or terminal degrees. The faculty's commitment to provide extra help to students is one of UW-Stout's proudest traditions.

Students

In terms of enrollment, UW-Stout is not a local or state school. Its 7,200 students come from more than 30 states in the nation and 35 foreign countries. Students have a major voice in the affairs of the university and sit on important university committees. Besides regular and informal meetings with students, the university's chancellor has "an open door policy." More than \$200,000 in student activity funds are administered by student government. There are more than 100 student clubs and organizations on campus, including national fraternities and sororities.

Facilities

Modern and well-equipped facilities mark UW-Stout's 118-acre campus. We are proud of our laboratory-intensive programs. More than 40 laboratories, encompassing more than 150,000 square feet, are available in the School of Industry and Technology for study and research in the areas of electronics, power, industrial management, industrial design, industrial graphics, packaging, plastics, metals and woods.

The School of Home Economics maintains laboratories for the study of food science, dietetics, hospitality, tourism, interior decorating, retail merchandising, clothing and textiles design, human development, and family and consumer education services.

The School of Liberal Studies offers studios to support programs in art, industrial design and interior design, and specialized mathematics computer laboratories.

The Stout Vocational Rehabilitation Institute provides research and practicum experience for students in the Vocational Rehabilitation program, in the School of Education and Human Services. Students work with professionals at the institute to provide services for clients referred by state agencies.

Located in the center of the city of Menomonie, adjacent to the downtown business district and Lake Menomin, UW-Stout offers an attractive, convenient and accessible campus setting.

The Community

Located in scenic western Wisconsin, Menomonie has a population of approximately 13,000. The area's natural beauty, with lakes, rivers and hills, provides many year-round recreational and sports opportunities. Major entertainment and cultural activities are available on campus, in the community and in the Twin Cities, about an hour away.

ADMISSIONS

Information for All Applicants

This section provides general information for degree-seeking students. If you wish to take classes for professional or personal development, you need only read the section titled "Special Students."

If you will be taking classes to work toward a degree, you must apply for admission to the university. You can obtain a UW System Application for Admission form by writing the director of Admissions at UW-Stout, or contacting any Wisconsin or Minnesota high school guidance office.

UW-Stout accepts applications as early as September 15 for admission to the following fall term. There is no deadline for applications; however, we are limited in the number of students we can accept. The university asks you to declare a major on the application form. When a program is full, we cannot admit more students to that major. Some majors are filled as early as 10 months in advance of the fall semester.

Keep in mind that you may also have to meet entry standards set by a school or department. See the sections on the individual programs (pages 21-71) for more information.

If you do not meet the standards for admission, you may be placed on a waiting list and will be considered for admission only if space is available in your chosen major. You will be notified no later than May 1 if you have been admitted. If you do not qualify for admission, you may appeal for special consideration through the director of Admissions.

UW-Stout will keep you informed of pertinent changes at the university. If you have the chance to study part time elsewhere, you will be able to check the transferability of your course work to UW-Stout by contacting the university's Admissions Office.

Notice: You must provide the university with accurate information about your personal and educational history. UW-Stout's policy is that students who intentionally falsify or omit information given as part of their university record will be suspended.

Auditing Classes

If you are not concerned about receiving college credit for courses you take, you may audit classes. Wisconsin residents may audit classes for 30 percent of the normal per credit academic fee. The cost for nonresidents is 50 percent of the normal fee.

You may audit classes provided that you apply for admission; the class teacher approves your request to audit the class; you pay any special costs for course instruction other than the normal tuition; and the university will not be required to provide additional classroom or laboratory space for you, and will not realize increased instructional costs.

Admission Categories

Admission procedures and standards vary somewhat from group to group. Following is a definition of each category. Find the category that applies to you, then find the section for that category (pages 4-6) for information on what you will need in order to be admitted to UW-Stout.

Freshmen: graduates of high schools in the United States and those who will be graduating, who have not attended another university or technical school.

UW System transfer students: applicants who have attended another university in the UW System and wish to transfer to UW-Stout.

Technical school transfer students: applicants who have attended a vocational, technical or adult school and wish to transfer to UW-Stout.

Other transfer students: students who have attended a university outside the UW System and wish to transfer to UW-Stout.

Re-entry students: students who have attended UW-Stout in the past and wish to again take classes at the university.

Non-traditional students: persons 21 or older who do not otherwise qualify for admission.

Special students: students who wish to further their education, but are not seeking a degree from UW-Stout.

Post-secondary educational option students: high school students who wish to take university courses under the Post-secondary Educational Option program (PSEO). Students must apply both through their high school and UW-Stout for permission to enroll.

International students: students from countries other than the United States, who wish to attend UW-Stout.

You will receive only provisional permission to attend classes until course registration is completed. You may not change your admission status and take the course for credit once the class has started. You will be subject to Regent, university and student government regulations, just like students who are taking courses for credit.

Note: As with all students attending the university, special students and auditors must provide UW-Stout with accurate information about their personal and educational history. The university policy is that students who intentionally falsify or omit information given as part of their university record will be suspended.

Freshmen:

1. You must be a graduate from a recognized high school or equivalent. If you are not a high school graduate, please refer to the section headed "Non-Traditional Students."
2. **1994 Applicants** You must have a minimum of 16 high school college preparatory credits with the following distribution:
 - four credits of English (*may include speech*)
 - two credits of mathematics
 - two credits of science
 - three credits of social science
 - three credits from the above areas, including foreign language
 - two credits from the above areas, or fine arts, computer science and other academic areas.

1995 Applicants You must have a minimum of 17 high school college preparatory credits with the following distribution:

- four credits of English (*may include speech*)
 - three credits of mathematics (*Algebra I and higher*)
 - three credits of science
 - three credits of social science
 - two credits from the above areas, including foreign language
 - two credits from the above areas, or fine arts, computer science and other academic areas.
3. You must provide evidence that you are prepared to do satisfactory work. UW-Stout requires that you graduate in the top 50 percent of your class, or have a cumulative score of 22 or better on the American College Test (ACT) or a combined verbal and mathematics score of 900 on the Scholastic Aptitude Test (SAT).
The university provides special consideration for applicants who have served at least 180 days of active military duty, are at least two years out of high school, or have been disadvantaged as a result of substandard education, family income level, or ethnic background.
 4. All freshmen must take the ACT; however, the test is not the only criterion for admission. Applicants who are not residents of Wisconsin may submit SAT scores. The admission test requirement may be waived if you have been out of high school for two or more years, are age 21 or older, or are an international student.
 5. **Manufacturing Engineering Applicants** Applicants to the Manufacturing Engineering program must meet the above criteria, *plus* rank in the upper 40 percent of their high school class, and have an ACT mathematics score of 22. Applicants who are *not* in the top 40 percent of their high school class must have a mathematics score of 22 and a composite score of 22 on the ACT.

UW System Transfer Students

1. The university will need an official transcript from each post-secondary institution you have attended. The transcripts are due by early September for admission the following fall, and early March for the following spring semester. Apply early so you can register for classes and complete the financial aid application process. UW-Stout enrollments are limited, so it's important that you plan and apply early.
2. You must have a cumulative grade point average of at least 2.00.
3. If you have fewer than 30 transferable credits and less than a 2.00 cumulative grade point average, you are still admissible to UW-Stout if you would have been admissible as a new freshman, or if you would have been eligible to continue at UW-Stout had you achieved your existing academic record here. You will be placed on a waiting list and admitted on probation if space is available. You will be notified no later than May 1.
4. UW-Stout has a joint admission policy with the UW System center campuses. If you choose to participate in this program, you are guaranteed admission to UW-Stout, provided you meet the provisions of the policy.

Center system counselors can help you select course work that will relate to your planned major at UW-Stout. Under UW System policy, you may transfer up to half the number of credits required for graduation in your major at UW-Stout.

Technical School Transfer Students

1. If you are transferring from a vocational, technical and adult education institution, UW-Stout will accept credits you have earned from VTAE college parallel programs, and similar programs from other states.
2. UW-Stout may accept up to 15 general education credits from non-college parallel two-year associate degree programs at VTAE institutions. The transfer credits must be approved by the university's Office of Academic Affairs. The student must earn the A.A.S. or A.A.A. degree to receive the general education credit.
3. UW-Stout has identified many associate degree programs that are not college parallel, but follow a professional development pattern similar to programs at the university. If you're transferring from such a program, UW-Stout may accept some of your technical credits. The UW System Office of Academic Affairs decides what credits will transfer.
4. Credit earned from institutions which are fully accredited, or candidates for accreditation, are fully transferable. Credits from institutions accredited by a professional accrediting association may transfer in the specialty of accreditation if recommended by the appropriate academic department.

Other Transfer Students

1. Because the enrollment is limited, the university may give preference to students transferring from UW System institutions, up to the limit of our enrollment targets.
2. The required grade point average is the only difference in policy for transfer students from institutions outside the UW System. You must have a cumulative grade point average of at least 2.20 (on a 4.00 scale) at the institution you most recently attended.
3. If your cumulative grade point average is above 2.00 but lower than 2.20, you will be put on a waiting list and offered admission at a later date if space permits. You will be notified no later than May 1.
4. Credit earned from institutions that are fully accredited, or candidates for accreditation, are fully transferable. If you are transferring from an institution accredited by a professional accrediting association, the academic department you are entering will determine if credits in a specialty area will apply to your major.

Re-entry Students

There are two types of re-entry students: **Regular re-entry students** are those who have completed no transferable credits from any post-secondary institution since they last attended UW-Stout. **Transfer re-entry students** are those who have completed transferable credits at a post-secondary institution since they last attended UW-Stout.

Regular re-entry students:

1. You need to complete the UW System Application for Admission form and return it to the Admissions Office. If you left the university in good standing, you will be immediately readmitted to the university if enrollment management goals will allow.
2. If you left on academic probation, you will be readmitted on academic probation, provided there is room for you in your chosen program.
3. The director of Admissions or a designee will review applications from re-entry students who were academically dismissed from the university. If the application for readmission is denied, the decision may be appealed to the University Committee on Admissions and Credits.

Transfer re-entry students:

1. You must submit official transcripts from each institution you attended, as well as a completed UW System Application for Admission form. If you left the university in good standing or on probation, you will be readmitted in the same status, provided you are eligible to return to the institution you last attended, and provided enrollment management goals have not been reached.
2. If you left UW-Stout because of academic dismissal, but earned a grade point average of 2.00 or better at your most recent school, you may be readmitted on probation, at the discretion of the director of Admissions or a designee.
3. If your grade point average is less than 2.00, you will be denied readmittance to UW-Stout. You may appeal that decision to the University Committee on Admissions and Credits.

Non-traditional Students

Persons age 21 and older may be admitted to the university even though they have not completed high school. Applicants in this category must provide evidence of their ability to begin college work. Non-traditional students who may be admitted include:

1. Applicants with a GED examination score showing high school equivalency and an ACT score of 21 or higher.
Beginning in 1995, the ACT score must be 22 or higher.
2. Applicants with a 2.00 cumulative grade point average for a minimum of 12 credits taken as a "special student" (see that category for more information).
3. Applicants who have completed eight or more credits in preparatory courses at a VTAE institution with a 2.5 or higher grade point average, and have a recommendation from that institution.
Beginning in 1995, applicants who meet institutional standards in preparatory courses taken at a VTAE institution may be admitted.
4. An applicant who has the recommendation of a high school counselor or other person with an appropriate academic background who has had an opportunity to evaluate the applicant's ability, and can explain why the applicant has a reasonable probability of success despite failure to meet the standard criteria; and a positive assessment of the student's ability to succeed at UW-Stout by the director of Admissions.
5. Older non-traditional applicants who have demonstrated a significant increase in maturity based on life experience in the judgment of the director of Admissions, based on information presented by the applicant.
6. Veterans with at least 180 days of active duty.
7. Those who have been admitted to a program to assist qualified applicants who are educationally disadvantaged due to physical or clinically diagnosed learning disability.
8. Those admitted to programs to assist people who are educationally disadvantaged as a result of substandard education, family income level or ethnic background.
9. Those admitted to programs designed to assist people who are incarcerated.
10. Admitted for reasons not specified in the choices above, at the discretion of the director of Admissions.

Special Students

This diverse group of students may include midcareer professionals seeking certification for a changing technology, community members seeking courses for personal fulfillment, high school students taking classes not offered at a high school, guests and auditors.

1. To be admitted as a special student, simply indicate that status on the application for admission. You do not need to indicate a major, submit transcripts, take the ACT, or pay the application fee. High school students admitted as special students must gain the approval of their parents and their high school.
2. As a special student, you must take the English and math placement tests before enrolling in an English or math course.
3. You are not eligible for financial aid.
4. You are limited to six credits each semester (*exceptions must be approved by the Office of Advisement*).
5. You may request to change your status to degree-seeking student after you have completed 12 credits. You may accumulate a maximum of 29 credits as a special student.
6. If you decide to change your status and become a degree-seeking student, you will have to complete the application process required of new students—submit transcripts, pay the application fee, complete a change of major card, and submit ACT scores.
7. High school students who wish to take classes at the university must rank in the top 50 percent of their high school class.

Post-Secondary Educational Option Program

The Post-Secondary Educational Option (PSEO) program serves high school students who wish to take classes not offered at a high school.

1. To be admitted as a PSEO student, simply indicate that status on the application for admission. You do not need to indicate a major, submit transcripts, take the ACT or pay the application fee. You must gain the approval of your parents and your high school.
2. You must take the English and math placement tests before enrolling in an English or math course.
3. You are not eligible for financial aid.
4. You must rank in the top 50 percent of your high school class.

International Students

1. All potential international students should have better than average academic records.
2. All applicants must present the university with official copies of their academic record.

First-year students must send certified copies of certificates, diplomas or degrees earned. These official records must be equal to a United States high school (*secondary school*) graduation for consideration.

Transfer students must submit certified records of their post-secondary academic work. The records must show the courses the students have taken and the grades they have earned. The university will not grant credit for courses unless there is evidence that the students have satisfactorily completed them.

Credit may be granted to international students if the institution they attended is listed in either the International Handbook of Universities or the Commonwealth Universities Handbook. Credit from institutions not listed in these publications may be transferred only upon the recommendation of the appropriate department.

3. The university will deny admission to students who submit records with any alterations or irregularities.
4. Additional records presented after the student has enrolled will not be considered for transfer.
5. All students from non-English speaking countries are required to take the Test of English as a Foreign Language (TOEFL). Applicants will need a minimum score of 500 to enroll in full-time study. Students with a TOEFL score of less than 500 will be required to enroll in English as Second Language (ESL) courses at UW-Stout or elsewhere to gain the competency needed before enrolling full time. Students with a TOEFL score below 450 will be denied admission.

For information on when and where to take the TOEFL, write to:

Test of English as a Foreign Language
Box 899
Princeton, New Jersey, USA 08540

6. All international students must show evidence that they have adequate finances to undertake a degree program at UW-Stout.

As a condition of admission, international students whose sponsors have a history of delinquency in payment of fees must place on deposit an amount approximately equal to the institution's non-resident tuition and fees for a 12-month period, which includes two semesters and an eight-week summer term. Applicants who must meet this requirement will be notified when the university receives their applications.

Questions about this policy may be addressed to the Office of Student Business Services or to the Office of International Programs.

SCHOLASTIC STANDARDS

Student Handbook

Each year, we update the UW-Stout "Student Handbook" and distribute it to each student. The handbook contains helpful information related to academic standards and campus policies, campus programs, rules and regulations, activities, organizations, and services. It is an official document of the university and contains many of the details not found in the university bulletin. All students are subject to the rules and standards as they are presented in the handbook.

Semester Credit

UW-Stout expresses credit in semester hours. One credit represents the satisfactory completion of the work of one meeting a week for a period of one semester. A course having five meetings a week will usually give five semester hours of credit. In order to receive a degree, you must not only gain the required number of credits in the program you are pursuing, but also must attain a certain standard of scholarship. (See also "Suspension and Probation.")

Credit by Examination

You may be able to receive credit by demonstrating your competence through examination. External examinations include the College Level Examination Program (CLEP) and the Proficiency Examination Program (PEP). For further information on external examinations, contact the University Counseling Center.

You may also receive credit through the "test out" procedures developed by various university academic departments. For more information, contact the appropriate school or department office.

If you test out of a course, you will be charged a testing fee.

Credit Registration and Overload Policy

A normal semester credit load is 16 or 17 credits. Register only for those classes you intend to complete. Do not register for classes which conflict with other class(es).

Undergraduate students, with the exception of graduating seniors, will be restricted to 16 credits during the early registration. Once registration is completed, students may add credits up to a maximum of 20 during the add/drop period. A fee will be charged for any credits beyond 18.

You may seek a waiver of the 20-credit limit by appealing to your program director. If the program director approves an overload permit, you must file it in the Registration and Records Office.

During summer session, you may enroll for a maximum of one credit per week. Again, if you want to seek a waiver to the credit limit, contact your program director.

Retroactive Credit for Foreign Language

Students who earn a grade of "B" (3.0) or better in foreign language courses would also receive credit for the lower level foreign language course or courses associated with that course.

Math and English Placement

Remedial Placement Students who are not transferring credits in math or English must take the regional math and English placement tests. These are given around the state during the spring semester. Make-up tests are given in the summer at announced times. Students who place into remedial math or English must successfully complete the course by the end of 30 credits or they will not be permitted to register.

Advanced Placement Students who perform well on the placement tests may be placed in an advanced English class (326-111 *Freshman English - Honors*). Students who receive a grade of "B" (3.0) or better in the class can elect to take any additional writing course to satisfy the six-credit requirement and not just those listed under the general education category.

Add/Drop Policy

Even with careful planning, you may find you have to add or drop a class after the semester begins. To comply with accreditation and financial aid regulations, UW-Stout has a published add/drop policy.

The following serves as UW-Stout's procedures for adding or dropping classes within the guidelines of the policy:

Students are expected to complete courses for which they register. Students who wish to adjust their class schedules may add or drop classes before the end of the second week of semester classes and before the end of the first week of quarter classes. Drops made during the first two weeks of a semester course or the first week of a quarter course will not appear on a student's transcript. If students deem it necessary to reduce their program after the normal (two week) add/drop period, they should do so as early as possible. A mark of "WS" or "WU" is given by the instructor and recorded on the student transcript for a course dropped after the add-period of a semester or quarter course but before the midterm date. After the midterm date, any withdrawal from a course is recorded as an "F." If extenuating circumstances warrant other consideration, an appeal may be made to the instructor of the course. Students who register for a course but do not attend the class and do not officially withdraw are given a mark of "F." Students who do not attend the first class meeting of a course, or who do not notify the instructor or department chairperson that they will be absent for special reasons, may at the instructor's option, be dropped from the course if, and only if, other students are waiting to enroll at that time. Students should consult the current term "timetable" for the official drop dates.

Grade Point and Symbols

Grade	Grade Points
A	= 4.00
A-	= 3.67
B+	= 3.33
B	= 3.00
B-	= 2.67
C+	= 2.33
C	= 2.00
C-	= 1.67
D+	= 1.33
D	= 1.00
D-	= 0.67
F	= 0.00
O	= Outstanding (no grade points)
S	= Satisfactory (no grade points)
U	= Unsatisfactory (no grade points)
W	= Withdrawal from school before midterm or grade assigned by registrar for an improper drop
I	= Incomplete
CR	= Credit (no grade points)
F	= Fail
IP	= In Progress (approved courses only)
AU	= Audit – no credit awarded
NC	= No Credit
WS	= Withdrawal – Satisfactory Work
WU	= Withdrawal – Unsatisfactory Work

Accommodating Religious Beliefs

UW-Stout honors individuals' religious beliefs. If scheduling of tests or other mandatory activities interferes with students' religious observances, students may request alternative arrangements.

Within the first three weeks of class, students must notify their instructors if there will be days or dates when their religious activities will prevent them from participating in academic events. For summer sessions or short courses, students must notify their instructors within the first week of class.

The university accepts, at face value, the sincerity of students' religious beliefs. Information students provide about their religion will be kept confidential.

Once instructors know of students' needs, they will be able to schedule make-up examinations or other course requirements, before or after the regularly scheduled examination or other requirement.

If students believe their religious beliefs have not been accommodated, they may file a grievance. For more information about the policy or the grievance procedure, contact the Dean of Students Office at extension 1181.

Procedure for Withdrawal from UW-Stout

Withdrawal should be undertaken only after serious consideration. If you intend to withdraw from the university, you must schedule an exit interview with the Registrar and complete a withdrawal form. If you fail to withdraw officially from the university, you will receive a grade of "F" in all your courses. Withdrawals after the midpoint of a term or course will generally result in "F" grades. (See *grading policy in Student Handbook*.)

Suspension and Probation

Grade point requirements for graduation vary by major. Minimum acceptable standards for retention are defined as follows:

1. First semester freshmen students will be placed on probation if they achieve a grade point average less than 1.8 at the end of the semester. They will be suspended if their grade point average is less than 1.0 for the semester.
2. Second semester freshmen will be placed on academic probation if their cumulative grade point average at the end of the semester is less than 1.9. They will be suspended if their grade point average is less than 1.0 for the semester.
3. Second semester sophomores or upper division students will be placed on academic probation if their cumulative grade point average at the end of the semester is less than 2.0. They will be suspended if their grade point average is less than 1.0 for the semester.
4. Students with two consecutive terms of probationary-level work will be dismissed unless they have a semester grade point average of 2.5 or better.

A student who has been declared academically ineligible to continue may request a hearing to appeal.

Requirements for Graduation

The semester credit hours required for graduation are stated under the program of study for each major. You are responsible for knowing and meeting the requirements for graduation. To fill the minimum residence requirement, you must earn the last 32 semester hours of credit (64 *grade points*) in residence at UW-Stout. One semester before graduation, you must file an Application for Degree card with the Office of Student Records.

Graduation with Honors

In each graduating class, the selection of students for honors is based upon scholarship. Upon completion of a student's undergraduate work, a minimum cumulative grade point average of 3.2 in 60 or more credits must have been earned. The designations Cum Laude (3.2 – 3.499), Magna Cum Laude (3.5 – 3.799) and Summa Cum Laude (3.8 – 4.0) are used. For commencement purposes, the cumulative grade point average earned at the end of the semester preceding the commencement ceremony will determine recognition at the commencement ceremony. However, honors will be officially determined at the time of final graduation checkout. A transfer student who has from 32 to 59.5 credits earned at UW-Stout will be considered for honors if the student's prior school(s) records met or exceeded the appropriate standard. Honors will be listed on the student's transcript and will appear on the diploma.

Chancellor's Award

The Chancellor's Award recognizes undergraduate students who receive a semester grade point average of 3.5 or above on 12 or more credits. A special Four Star Recognition Award will be given to students who attain a 4.0 average.

FINANCIAL INFORMATION

Fee Payment

You are expected to pay all fees according to the procedure outlined in the Student Handbook. Failure to pay fees may result in suspension. UW-Stout offers an opportunity to pay fees in installments. This program requires a down payment plus any past due amount or total payment at registration, whichever is less. The balance is due in additional monthly installments.

Semester Costs

Undergraduate fees are set by the University of Wisconsin Board of Regents and are subject to change. Semester fees for undergraduate students registered for 12 or more credits are:

Resident	\$1,087.52
Minnesota Resident	\$1,258.52
Non-resident	\$3,311.52

These fees incorporate the usual student costs such as textbook rental, Student Center, student activity and health fees. However, the schedule does not include lab or material fees charged in some courses. All undergraduate students who enroll for more than 18 credits will be assessed a per credit fee for those credits.

Since we must prepare this bulletin far in advance, all tuition and fees, room and food rates, and other charges are subject to change without notice. Additional changes to the tuition and fee schedule are anticipated for 1994-95.

Minnesota Students

If you are a Minnesota resident and a new student at UW-Stout, you must submit a reciprocity application to Minnesota. Approval takes up to four (4) weeks. If approved for reciprocity, you will be charged at the Minnesota resident tuition rate. Applications are available at the Financial Aid Office and the Office of Student Business Services. The State of Minnesota has indicated that "reciprocity benefits will not be granted retroactively" and that "each student is responsible for the application process." Therefore, each new student must complete and mail a correct, signed and notarized application before the last day of the semester. Apply early to avoid complications. Students that have been in attendance at UW-Stout and have earned credits during the previous academic year will automatically have reciprocity renewed by the State of Minnesota.

Students Auditing Classes

Wisconsin residents may audit classes for 30 percent of the normal per credit academic fee. The cost for non-residents is 50 percent of the normal fee.

Refund on Fees

Withdrawal from semester courses generates refunds based on the following schedule: first and second week of classes, 100 percent; third and fourth week, 50 percent. After the fourth week, no refunds will be made. Refunds for room and food service charges are based on the date of withdrawal.

Graduation Fee

When you complete 110 semester hours of credit, you will be billed \$30 for the graduation fee. This fee pays for the diploma cover and other costs and accessories that go with the commencement exercises. It does not cover the cost of the cap and gown. You will be assessed this fee whether or not you attend commencement exercises.

Unpaid Obligations

Failure to meet financial obligations is a serious matter. Therefore, if you owe money to the university and fail to meet that obligation, UW-Stout may suspend you. You will not be allowed to register or receive transcripts until your delinquent accounts are brought up-to-date. Collection costs may be assessed on any unpaid charges owed to the university.

Financial Aid

Financial aid provides assistance to financially needy students, who without such aid, would be unable to attend college.

The philosophy for all need-based financial aid programs is that students and their families are primarily responsible for financing their education. Families applying for financial aid need to fill out a financial statement listing their income, assets and liabilities. A financial aid officer will use established formulas to determine a reasonable contribution from the student and family. State and federal financial aid is intended to meet education costs above that reasonable contribution.

Financial aid must be applied for annually. Financial assistance is awarded for the entire academic year. If you apply, you will be considered for all types of aid, including grants, work and loans.

Financial aid awards are based on full-time status, 12 credits or more. You must consult with the Financial Aid Office if you are planning to carry less than a full-time credit load, as an adjustment will have to be made in the aid award.

We encourage applicants to submit financial statements by April 1 of each year. Applications received after that date are processed on a first come, first served basis. Applicants whose forms are in early are notified between June 1 and June 30 whether or not they are eligible for financial aid.

Financial aid counselors are available for consultation. Stop at the Financial Aid Office, 210 Bowman Hall, if planning to visit the campus. Please call 715/232-1363 or write for an appointment.

UNDERGRADUATE SCHOLARSHIPS

Merit-Based Freshman Scholarships

More than \$100,000 is awarded annually to outstanding high school seniors through merit-based freshman scholarships. All entering freshmen are considered for these scholarships. Selection is based solely on academic merit without regard for financial need. Recipients are notified shortly after acceptance to UW-Stout.

Scholarship: Wisconsin Academic Excellence Scholarship

Award: Tuition and Fees

Criteria: Selected by high school

Scholarship: National Merit Finalist

Award: \$2,000

Criteria: Automatically awarded to NMSQT Finalist

Scholarship: National Merit Semifinalist

Award: \$1,000

Criteria: Automatically awarded to NMSQT Semifinalist

Scholarship: Chancellor's Academic Honor Scholarship

Award: \$1,000

Criteria: Automatically awarded to the top 10 percent class rank

Merit-based scholarships are not cumulative. Students who qualify for more than one scholarship will be awarded the scholarship of highest value.

Stout University Foundation Scholarships

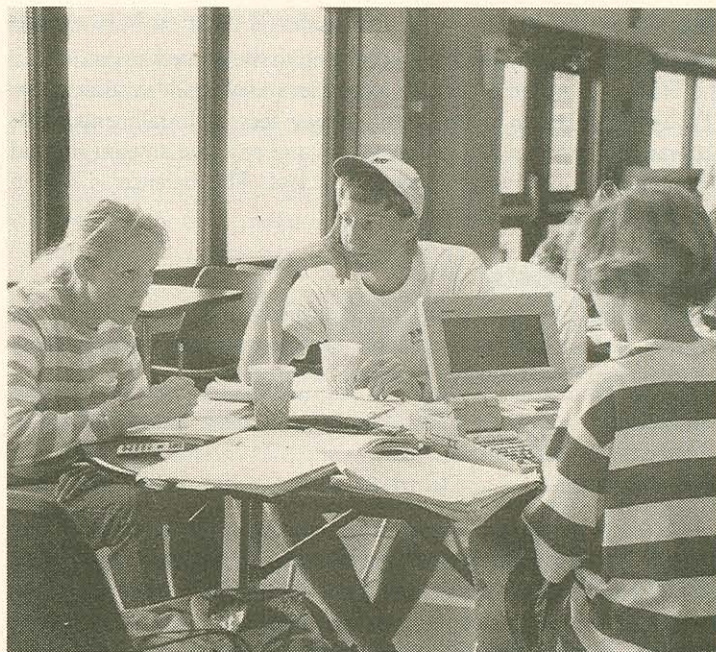
The Stout University Foundation awards more than \$100,000 in scholarships for undergraduate and graduate students at UW-Stout. These scholarships are financed by the contributions of alumni, friends, parents, faculty, campus organizations, other UW-Stout staff, foundations and corporations.

No single factor will be responsible for an applicant receiving a scholarship. Factors which are considered include academic performance, teacher evaluation and comments, professional activities, extra-curricular activities, community involvement, written statements, neatness and care in completing the application, and, in many cases, financial need.

Scholarship application forms are available from the Stout University Foundation, Louis Smith Tainter House; or from the Office of School Relations, 130 Bowman Hall, beginning December 1. Completed application forms must be submitted to the Stout University Foundation by March 1.

The Scholarship Committee reviews applications and makes awards in the spring. Recipients are notified in May. Recipients are required to write a letter of appreciation to the scholarship donors before payment is made for tuition. A formal reception honors scholarship winners, donors, friends and family the first week of the fall semester.

For additional information about these scholarships, contact the Stout University Foundation, Louis Smith Tainter House, 715/232-1256.



Other Scholarship Opportunities

By investing a little time and energy, you can conduct your own scholarship search.

Scholarships are often provided by community agencies, corporations, clubs, cultural groups, foundations, churches and civic groups. While many are not based on financial need, you will usually have to meet some criteria to qualify for funding—academic achievement, community activities, leadership, ethnic or racial heritage, athletic ability, or other guidelines.

High school guidance counselors can supply a list of some of the scholarships available in your region. Reference librarians may also be able to help you identify sources. But there are other possible sources of funding for your education.

- Find out if your parents' employers, professional organizations or labor unions offer scholarships.
- Contact regional civic organizations and ask about scholarships. The Chamber of Commerce, Rotary Club, Lions Club or other groups may have funding available.
- Go to the library and review books that list financial aid sources.
- Contact groups in your community, including churches, veterans, industries and major businesses.
- Look for notices of educational funding opportunities in your newspaper or on bulletin boards. Check on radio or television.
- Check with your program director or the dean's office for the school your degree program is housed in for private scholarship information.
- Contact the national office of your student professional organization for scholarship opportunities.

Not all scholarships are for large amounts of money, but any scholarship can help offset the cost of an education.

STUDENT SERVICES

New Student Orientation

If you are a new freshman, we encourage you and your parents to attend a summer orientation and registration program. During these scheduled one-day visits, you will participate in orientation activities that provide important information about services for students, degree programs, career opportunities and academic advisement in course selection. You will develop your fall semester class schedule.

If you are a transfer student, we also invite you to campus during the summer to receive academic advisement and develop a class schedule. During the first few days of the fall semester, new students participate in additional orientation activities.

Student Support Services

Student Support Services is a collaboration of programs that provide services for students with special needs. Students eligible for services include those who are academically or economically disadvantaged, first generation college students, members of minority groups, returning adult students, and students who have a physical disability or learning disability.

To find out more about programming and services, contact Student Support Services, 206 Bowman Hall, 715/232-2995.

Trio Programs: ASPIRE and Talent Search Trio Programs are federally funded efforts to help students secure a postsecondary education. Services are available to those who have been underrepresented in access to higher education due to economic factors, or physical or learning disabilities. First generation students and students who express academic need are also eligible for services.

Through ASPIRE, eligible students may receive tutoring and participate in educational, career and personal development activities. ASPIRE works with students to monitor their academic progress and set educational goals.

Talent Search encourages high school students and high school dropouts to graduate and enter postsecondary education. The program helps participants explore educational and career opportunities, and provides assistance with admissions and financial aid applications.

Academic Skills Center Students who need academic assistance may turn to the Academic Skills Center. The center helps students improve their reading, writing, spelling and study skills through individualized help or the Reading Improvement and Study Skill class (421-280). Spelling and grammar instruction is offered each quarter to small groups. The center also coordinates the Volunteer Tutoring Program, offering help in selected classes.

The Academic Skills Center is located in Room 201 of the Library Learning Center, and is open 8 a.m. to 4:30 p.m., Monday through Friday.

Minority Student Services African-Americans, Native Americans, Hispanics and Southeast Asian Americans may turn to the Minority Student Services office for support and assistance. The office helps students make the adjustment to the university, and provides career assistance and personal counseling. The office is also a source of information about scholarships and cultural organizations for minority students, and multicultural programs.



Services for Students with Disabilities Students who may require services related to their disability are urged to contact the office of Services for Students with Disabilities at least eight weeks before the beginning of the semester, to make sure that support services are in place when they arrive on campus.

The services the office provides include taped textbooks, classroom accommodations, and self-advocacy skill building. The staff acts as a liaison with faculty, provides referrals to appropriate campus and community resources, and assists students with registration. The office maintains a learning disabilities specialist, and information on specialized equipment and accessibility.

Returning Adult Student Program The Returning Adult Student Program provides services for students who are returning to school after working or meeting family obligations for some time.

The Adult Student Mentor program aids the transition to UW-Stout by providing a one-to-one relationship with another returning adult student. Each semester, a panel of adult students welcomes incoming students with a special orientation session, and panel members discuss their past fears and triumphs. The Organization of Adult Students Involved at Stout (OASIS) is a social group where adult students can exchange information and provide support for one another. OASIS events include weekend lunchtime gatherings, monthly meetings, and other social activities.

University Counseling Center

"Am I in the right major?" "Would I be happiest in business or in teaching?" "How can I get over being uptight when I have to speak in front of a class?" "I'm having some hassles with my family and don't know what to do." These are some of the issues students bring to the University Counseling Center, a free service to students.

Everyone encounters dilemmas, decisions and personal questions that are tough to answer. The University Counseling Center helps students find answers to these questions. Counselors help students work through any number of issues, including changing majors, career choice, educational concerns and personal issues.

Workshops and support groups are offered throughout the year in many areas, such as planning career and life goals, building social skills, dealing with eating concerns, learning stress management, undergoing alcohol skills moderation training, enhancing self-esteem, learning time management and exploring wellness lifestyles.

Career development workshops are continuously offered throughout each semester at the Career Development Laboratory. In these workshops, occupational choices and educational programs are compared with the interests and values students report and the results of vocational, personal style and ability tests.

Testing services available include CLEP and PEP (*see Credit by Examination*), Miller Analogies Test, ACT Residual, career interest inventories, Test of English as a Foreign Language (TOEFL), and personality tests. In addition, information and application forms are available for a variety of other tests, such as the GRE, GMAT, LSAT and NTE.

The Alcohol and Other Drug Education Program (AODEP) of the University Counseling Center offers a multitude of groups, classes, special presentations, information resources, research, interventions and other campuswide activities in this area.

Confidentiality is stringently protected by state and federal statutes, as well as by the ethical standards of the American Psychological Association and other professional organizations. Counseling information is held in the strictest of confidence, unless with the student's explicit permission, it is released to others with a legitimate need for the information.

Appointments can be made in person or by calling 715/232-2468. The center is located in the lower level of Bowman Hall, Room 11. Hours are 7:45 a.m. to 4:30 p.m., Monday through Friday.

Placement Services

The university maintains a full-time Placement and Co-op Services office for all students and alumni. Staff members can help you plan for future employment opportunities. Four full-time counselors are available. Career conferences, campus recruitment, workshops and one-on-one counseling are just a few of the services the office provides.

Placement of UW-Stout graduates is a major emphasis at the university. Placement and Co-op Services maintains statistical reports on the employment of graduates.

More information is available from the Placement and Co-op Services Office, 103 Administration Building, 715/232-1601.

International Student Services

The Office of International Student Services works with students from 35 countries. The office staff provides counseling, advisement and referrals for all foreign nationals at the university in such areas as housing, finances, academics, social customs and personal concerns. The office also provides a link between the international students and the greater area community, facilitating cultural awareness and understanding.

English Language Institute

The English Language Institute provides instruction in English for people who do not speak English as their native language. Students receive 20 hours per week of language instruction. In as little as a year, students can achieve a level of proficiency that would allow them to attend the university.

The English Language Institute has a professional teaching staff, and manages its own recruitment and student services. It is funded by fees students pay to attend the Institute.

Veterans Service

The Registration and Records Office provides assistance to veterans. This office provides veteran students with current information on veteran's affairs, coordinates special educational programs for veterans, and maintains liaison with the Veterans Administration, Department of Veterans Affairs and the County Veterans Service Officers. All veterans receiving assistance must file the appropriate forms with this office to be officially certified to receive benefits.

Student Health Services

All UW-Stout students are eligible for care at the Student Health Services. Clinical and education programs are funded by the student health fee which is included in the tuition and fee payment. Services include illness and injury care, health maintenance, allergy injections, lab services, contraceptive options, and health education programming. Make an appointment by calling 715/232-1314. Services are available from 8 a.m. to noon and 1-4:30 p.m., Monday through Friday during the period when classes are in session. Health services are not available during the summer. If you need urgent care during hours when the Health Services is closed, contact Red Cedar Clinic, 715/235-9671, or the Myrtle Werth Medical Center, 715/235-5531. Any services obtained outside Health Services are paid by the student or insurance.



Student Activities

You may choose from more than 100 student organizations and activities on campus, in areas as diverse as music, drama, journalism, religion, politics and recreation. Fraternities and sororities help students continually develop their interests. The university also has a complete recreation and intramural program for men and women.

Academic Honor Society	Nutrition Food Association
Al Fresco	Organization of Adult Students
Alpha Omega Kappa Fraternity	Involved in Stout (OASIS)
Alternative Party Committee	Pawn Live
American Marketing Association	Phi Sigma Phi
American Design Drafting Association	Power 100
American Production	Prometheus
Inventory Control Society	Psychology Club
Amnesty International	Recreation Commission
Antique Auto Club, UW-Stout	Resort and Property Management Association
Applied Math Club	Restaurant Tavern Managers Association
Apparel, Textiles and	Retail Directions
Design Association (ATDA)	Safewalk
Black Student Union	Society of Hospitality Industry Professionals
Bowling Club	Ski Club
Campus AA	Ski Race Team
Campus Crusade for Christ	Ski Club—Nordic Ski Team
Campus Music Productions	Society of Manufacturing Engineers
Catering Club	Speaker Series
Cheer and Stunt Squad	Soccer Club—Men
Chi-Alpha Intercessors	Soccer Club—Women
Chinese Student Organization	Society for Human Resource Management
Club Managers Association	Spirits
College Republicans	The Stoutonia
Council for Exceptional Children	Stout Cinema
Cycling Club	Stout Comedy Club
Distributive Education Clubs of America (DECA)	Stout Home Economics Association (SHEA)
Downhill Ski Team	Stout Judo
Electronics Club	Stout Sailing/Menomonie Jammers
Family Weekend Committee	Stout Student Association
Fine Arts Association	TECA Club
Forensics	University Theatre
Graduate Student Association	Stout Council on Family Relations
Graphic Design Association	Stout Veterans CILub
Green Sense	Vocational Rehabilitation Club
Hmong Student Organization	WELS—Campus Ministry
Hockey Club	Women in Management
Hockey Cheerleaders	Young Democrats
Home Economics in Business	Zeta Epsilon
Hotel/Motel Management Association	
Hotel Sales and Marketing Association	
Industrial Distribution Club	
Institute of Packaging Professionals	
Intervarsity Christian Fellowship	
International Relations Club	
Information Technology Association	
International Business Club	
Inter-Residence Hall Council (IRHC)	
Iron Works	
Kinship	
Latter Day Saint Student Association	
Los Hispanos Club	
Martial Arts Club	
Menomonie Association	
for the Education of Young Children	
Men's Volleyball Club	

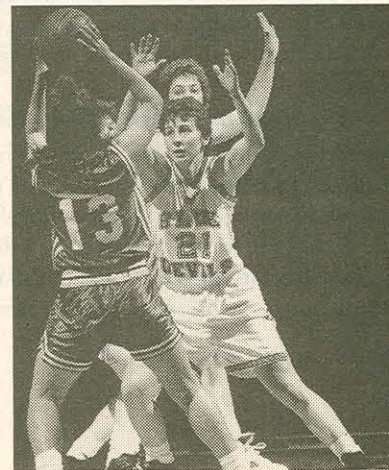
Greek Organizations

Alpha Omicron
Alpha Phi Sorority
Alpha Phi Omega Fraternity
Chi Lambda Fraternity
Delta Zeta Sorority
Gamma Sigma Sigma Sorority
Inter-Fraternal Council
Inter Greek Council
Inter Greek Programming Board
Kappa Lambda Beta Fraternity
Panhellenic Council
Phi Omega Beta Fraternity
Phi Upsilon Omicron
Sigma Sigma Sigma Sorority
Sigma Tau Gamma Fraternity

Memorial Student Center

The Memorial Student Center serves as a campus community center where students, faculty, staff, administration, alumni and guests can get to know and understand one another through informal association outside the classroom. As a "living room," the Student Center provides for services, conveniences and amenities for members of the university community.

Major operations within the Memorial Student Center include the University Bookstore, three dining service facilities, recreation center, service/information center, and student activities administration. For more information, call 715/232-1431.



Intercollegiate Athletics

The athletic program emphasizes educational values for the participants and provides a laboratory for students in the coaching certification program. UW-Stout is a member of the Wisconsin State University Conference, the Wisconsin Women's Intercollegiate Athletic Conference, and the National Collegiate Athletic Association-Division III. The university sponsors seven women's and seven men's varsity teams. Women's teams include basketball, cross country, gymnastics, softball, tennis, track and field, and volleyball. Men's teams are baseball, basketball, cross country, football, tennis, track and field, and wrestling.

Library Learning Center

The Library Learning Center has a collection of more than a million items, including audiovisual items, periodicals and books. The computerized catalog system allows rapid searching for information, both in the library and at stations on and off campus.

The library houses in-depth collections in UW-Stout's major fields of study, and a complete collection of Educational Resource Information Center (ERIC) documents on microfiche. OCLC FIRST SEARCH and the INTERNET provide access to hundreds of specialized databases. The staff will conduct on-line computerized literature searches free of charge for students and faculty.

The library also houses two computing laboratories equipped with microcomputers, hard-disk servers, printers, and terminals connected to time-sharing computers. The library is open 95 hours per week.

Telecommunication Services

Telecommunications Services provide the campus with telephone, network, video and data information systems design, installation, and maintenance services. The unit also maintains and repairs campus computing, audiovisual and television equipment.

Computer User Support Services

Computer User Support Services, a unit of Computing and Telecommunications, provides computer hardware and software for student use.

Resources include approximately 150 Macintosh and IBM-compatible personal computers with a variety of software in the Campus Computing Laboratory (CCL), located in the Library Learning Center. The software supports instructional use in other laboratories and classrooms across the campus. The CCL is generally open the same hours as the Library Learning Center. The CCL provides workshops early in the semester for students who want to learn how to use the computers and software.

Also provided is access to mini-computers for access to Internet, library resources and electronic mail. Use of the computers is free, but there is a minimal charge for printing in the CCL. Students with their own personal computers and modems can take advantage of dial-up access to campus computing resources.

Computer User Support Services also offers a program that allows students to purchase a computer at a discounted price, and provides statistical analysis for students' research studies.

Instructional Technology Services

Instructional Technology Services is housed in the Communications Center. Professional media specialists provide staff and students with consultation in areas of instructional development, media design, utilization, media equipment and facilities. ITS produces materials in various formats including multimedia, still photography, graphics, instructional television and audio recording.

Teleproduction Center

The Stout Teleproduction Center is a broadcast-level production facility which produces programming for Wisconsin Public Television and other state educational organizations and non-profit agencies. The center also provides services for satellite video conference origination.

On-Campus Housing

Residence hall living will be a meaningful part of your life at UW-Stout. With the help of a professionally trained staff, students achieve their goals through a variety of social, educational and recreational activities. The university provides residence hall accommodations for approximately 2,900 students.

UW System policy requires freshmen and sophomores (*59 credits or fewer who are not veterans, married or living with parents or guardian*) to live in university-operated residence halls. This policy is strictly enforced.

We encourage you to apply for residence hall accommodations immediately after being accepted to the university. An application card for the residence halls accompanies the letter of acceptance from the Admissions Office.

We send out lease/contracts for residence hall rooms in the order in which we receive applications for rooms. We require a \$100 security deposit with each lease/contract. Please note that \$25 of that amount is a non-refundable processing fee. The remaining \$75 is applied against the final payment for the second semester. You will be notified of the date you may move into your room before classes begin each semester. The lease/contract is valid for the entire academic year.

UW-Stout offers several special interest floors such as smoke-free, alcohol-free, quiet study and upperclass. One hall houses upperclass students and non-traditional students only. Single rooms are available at an additional cost. You may request a special interest floor when you submit your residence hall lease/contract.

Each room is furnished with two single beds, dressers, study tables, chairs and bookcases. A touch-tone telephone is provided. The rooms are approximately 11 feet by 15 feet and are carpeted. We permit radios, stereos and television sets in the rooms as long as you comply with the regulations for their use. Television sets are also available for general use in the main lounge of each building.

All residence hall students contract for their meals with the Residence Dining Service. A wide variety of dining plans is available. Microwaves, coffee pots, hot pots and popcorn poppers with unexposed elements are permitted in student rooms. Small refrigerators and microfridges (*refrigerator, freezer and microwave compact units*) are available for rental. Each residence hall also has a fully equipped kitchen.

The Stout Student Association Office maintains a list of off-campus housing. If you plan to live off campus, you may find it useful to visit Menomonie to secure the type of housing you desire.

SPECIAL PROGRAMS

The Co-op/Intern Program

Some degree programs require a co-op/intern experience, and it is a valuable option in many others. It provides an opportunity to work with professionals in your career area, before you graduate.

The program director approves a published job description before you begin the experience. You are awarded credit based on the length of the experience, the responsibilities given you, and the goals and objectives you carry into the job. Grades and credits are awarded by a university mentor.

A co-op or internship can be as short as one summer, or can last for a combination of semesters. For more information, contact Placement and Co-op Services, Room 103, Administration Building, 715/232-1601.

Field Experience Program

We encourage you to obtain part of your college education off the Menomonie campus through the Field Experience program. This program allows you to receive academic credit for learning related to your major or minor, while employed in an approved off-campus field position. Field experience requirements vary by major. In some cases, a co-op/intern position will satisfy this requirement. Most students use their summers to enroll in this program, but part-time work may also be permissible. For more information, contact the dean's office for the school that houses your major.

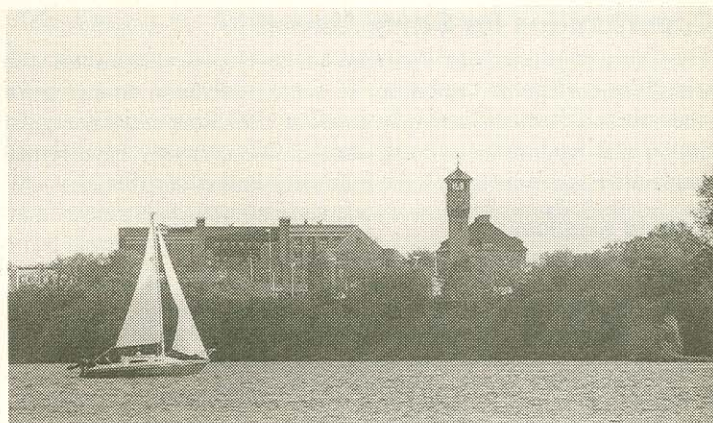
Industrial Work Experience

Students who have completed three years of skilled occupational experience beyond the learning level of a trade may earn a maximum of 24 semester hours of technical credit through examinations. Students with less experience may request examination in specific technical courses. If you wish to seek credit for skilled occupational experiences, present evidence of the required amount of work to the program director of Vocational, Technical and Adult Education in the School of Industry and Technology. Contact the program director shortly after registration to allow time for review of your materials and the examination.

Independent Study Program

The university's Independent Study Program allows you to design a limited number of courses yourself, to meet your individual goals. You begin by picking up an Application for Independent Study from the office of the associate dean of the school that would house the type of course you want. You identify the course objectives, methods and evaluation process, and submit it to an independent study coordinator for processing and approval. You'll work with an assigned independent study coordinator who provides counsel and help.

Independent study topics are different from existing courses. Be sure to ask your program director if your proposed independent study may be used in your degree program.



Summer Session

UW-Stout conducts a 10-week summer session with classes varying in length from one week to eight weeks. You may earn up to 10 credits during the 10 weeks of summer session. The Summer Session Bulletin is available after March 1. A copy will be sent on request. We encourage you to pre-enroll in classes in April and May.

Pigeon Lake

The UW System sponsors summer programs at the Pigeon Lake Field Station near Drummond in Bayfield County of northwestern Wisconsin. Station offerings include undergraduate and graduate courses in field biology, mapping, outdoor education, recreation, counseling and art. Class sessions vary from one to three weeks with some classes weekends only. Credit earned at the station is accepted as residence credit at UW-Stout. The field station is located in a natural outdoor laboratory among lakes, streams and forests. For more information, contact the registrar at UW-Stout or the director of the Pigeon Lake Field Station, UW-River Falls.

Continuing Education

UW-Stout has a tradition of providing educational opportunities on a local, regional, statewide and national basis as a commitment to the concept of life-long learning.

The Office of Continuing Education/Extension and Summer Session coordinates all off-campus educational activities. Off-campus credit and non-credit opportunities include:

1. Off-campus courses offered in the rural local service area of UW-Stout, as well as statewide, based on our special mission within the UW System, with a particular focus on vocational-technical education.
2. Teleconference courses mediated via the use of telephone network coordinated by our campus.
3. National satellite videoconferences.
4. Television courses via ETV Network.
5. Weekend workshops.
6. National, regional and state conferences.
7. Weekend college.

Opportunities for Study Abroad

The Office of International Programs has developed relationships with selected international institutions to assist students in arranging for study abroad. Students generally enroll at UW-Stout and pay regular tuition and fees while studying abroad. We currently have formal cooperative agreements with the following universities abroad:

United Kingdom

- Middlesex Polytechnic University in London
General studies, international business, psychology, hotel restaurant management
- Northeast Wales Institute of Higher Education in Wrexham
General studies, child development, early childhood education, student teaching
- Wisconsin in Scotland Study Center near Edinburgh
General studies, business administration, student teaching
- University of Wales in Aberystwyth
General studies, international business

Mexico

- Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM)
Monterrey—Intensive Spanish language, international business, general studies
Mazatlan—Intensive Spanish language, hospitality and tourism field experience

Art and Design Department Exchange Programs

- Les Ateliers in Paris, France
- West Surrey College of Art and Design in Farnham, England
- Fachhochschule in Hildesheim, Germany
- Akademie Industrielle Vormgeving in Eindhoven, Netherlands

Apparel, Textiles and Design Department Program

- American College in London
Fashion, retailing, apparel design

Programs of study are available in Spain, Germany, Australia and other countries through cooperation with other UW campuses. We encourage you to study abroad as part of your education at UW-Stout.

Mentoring International Students

Between 150 and 250 international students from more than 30 countries study at UW-Stout each year. American students are invited to volunteer for the mentor program for international students organized by the coordinator of International Student Services. This provides structured opportunities for those who are not able to study abroad to communicate with students from other cultures and learn from them, while providing a valuable service.

For more information, contact the Office of International Programs, 400C Bowman Hall, 715/232-1896.



The Graduate College

The Graduate College, a unit of the division of Academic Affairs, has responsibility for graduate education in the university. It administers graduate admissions, records, policies and other procedures relating to graduate students. Our graduate programs include:

School of Industry and Technology

- Industrial/Technology Education
- Management Technology
- Media Technology
- Safety
- Vocational Education
- Industrial and Vocational Education (Ed.S.)

School of Home Economics

- Food Science and Nutrition
- Home Economics
- Hospitality and Tourism

School of Education and Human Services

- Guidance and Counseling
- Marriage and Family Therapy
- Education
- School Psychology
- Vocational Rehabilitation
- Guidance and Counseling (Ed.S.)

Dual Undergraduate – Graduate Enrollment

Undergraduate students in their last term of enrollment who are carrying 14 or fewer undergraduate credits may begin graduate study in one of UW-Stout's graduate programs. Application for dual enrollment should be made to the Graduate Office. Initial enrollment in a graduate program must be concurrent with the final enrollment for the undergraduate degree.

TEACHER EDUCATION

Professional Teacher Education

The School of Education and Human Services administers professional education programs at UW-Stout and is responsible for the preparation of teachers and other professional school personnel.

The Office of Teacher Education is responsible for all clinical programs, maintains appropriate student records, maintains appropriate records for accreditation and Wisconsin Department of Public Instruction program approval, and serves as a resource center for students, faculty, program directors and administrators. The director of the Office of Teacher Education is also the certification officer at UW-Stout.

You can find complete curriculum for specific teacher education programs in this bulletin under:

Art Education
Early Childhood Education
Family and Consumer Educational Services
Technology Education
Marketing Education
Vocational Rehabilitation - Special Education

Undergraduate Teacher Education

You must follow these procedures to ensure graduation and certification in a professional education program. If, after reading this section, you have questions, please contact your program director or the director of the Office of Teacher Education, 715/232-1088, 342 Vocational Rehabilitation Building. The Wisconsin Department of Public Instruction makes periodic changes in teacher certification requirements that may affect you and your program. It is your responsibility to contact the Office of Teacher Education to make certain you have the most current information so that you know that you are pursuing a program plan that will allow you to be certified.

If you are enrolled in an undergraduate teacher preparation program, you must proceed through three steps:

1. Admission to Advanced Standing
2. Admission to Student Teaching
3. Teacher Certification

Admission to Advanced Standing

You should start preparing for admission to advanced standing beginning in your freshman year. To be an effective teacher, you'll need expertise in a subject area, but also fundamental skills and competencies needed in any teaching field. Admission to advanced standing ensures that you will meet basic standards of the profession. In order to remain in a teacher education program after completing 40 credit hours, you must have:

1. applied for Admission to Advanced Standing,
2. a minimum cumulative grade point average of 2.75, and
3. passed the Pre-Professional Skills Test (PPST).

You may obtain the Application for Admission to Advanced Standing in Professional Teacher Education from the Office of Teacher Education.

Requirements for Admission to Advanced Standing:

1. Communications:
 - a. College English - You must have earned a grade of at least a "C" (2.0) in English 326-101 and 326-102 or 321-111 and 326-112.
 - b. Speech proficiency - You must have earned a minimum grade of "C" (2.0) in 391-100, Fundamentals of Speech. You may also meet this requirement by receiving at least a "C" (2.0) on the written and oral portions of "The Speech Department Credit by Examination Procedure" for 391-100, or by successfully completing a second speech course selected from the following: 391-200, 391-206, 391-508 or 391-512.
2. Academic Standards: You must have a minimum cumulative grade point average of 2.75 for admission to advanced standing. *(You must maintain a 2.75 grade point average for the remainder of the program as a requirement for admission to student teaching, graduation and recommendation for certification.)*
3. A passing score on the Preprofessional Skills Test in Mathematics, Reading and Writing. *(The Office of Teacher Education has information concerning the cost, dates and location of the test.)*
4. Program requirements as specified by the program director.

Admission to Student Teaching

Student teaching is an extremely important and valuable part of your teacher preparation program. Your program director will provide you with the objectives to be fulfilled during student teaching, including, but not limited to, instruction, supervision, pupil evaluation, conferences with parents and faculty meetings. You will also be given the criteria for evaluation and retention in student teaching. Prior to registration for student teaching, you must complete the Application for Admission to Student Teaching, available from the Office of Teacher Education.

Requirements for Admission to Student Teaching:

1. A 2.75 cumulative grade point average.
2. Completion of all requirements for admission to advanced standing.
3. Successful completion of all preclinical and human relations field experiences (2.75 grade point average with a minimum grade of "C" [2.0] in each).
4. Successful completion of all education courses identified in Part 4 of the Application for Admission to Student Teaching (2.75 grade point average with a minimum grade of "C" [2.0] in each).
5. Competence in the area of academic specialization as specified by the program.

Teacher Certification

Teacher education programs at UW-Stout meet state teacher certification requirements in Wisconsin. Programs will likely meet certification requirements in many, if not all, other states. However, teacher certification varies by state (*some require state history or other course work*) and requirements change periodically. Therefore, if you are contemplating teaching in another state, you may wish to clarify the acceptance of your program at UW-Stout with the state in which you plan to teach. The director of the Office of Teacher Education is the certifying officer at UW-Stout. Forms and information concerning the certification process are available in the Office of Teacher Education.

Requirements You must meet the following requirements before UW-Stout can recommend you for certification in an undergraduate certification program:

1. Graduation with a minimum grade point average of 2.75 based on all course work except the clinical program. (*Clinical program is defined as all supervised experiences in a school setting which provide practical experience for the student, including prestudent teaching, student teaching, practicum and internships.*)
2. Successful completion of student teaching. (*Minimum grade of "B" [3.0] in programs using the grading system or "S" in programs using the OSU option.*)
3. A passing score on a standardized examination administered by the Department of Public Instruction. The passing score is determined by the State Superintendent of Public Instruction. (*The Office of Teacher Education has information concerning when and where this examination is administered.*)

Graduate Certification Programs

If you intend to enroll in a graduate certification program, refer to the Graduate Bulletin for the requirements to become a practicing professional.

Glossary

Academic Probation

A condition of attendance under which students are allowed to remain at the university with the understanding that they meet set academic standards within a set period of time. Failure to meet the standard results in dismissal from the university.

Add and Drop

The process of changing a course schedule by dropping or adding a course during the prescribed time at the beginning of each semester.

Audit

Students register and attend class, but do not take examinations. No credit hours are earned, and the cost of the class is less than regular tuition. "AU" will appear on the grade record.

Bachelor's Degree

The degree received after completing a specific program of undergraduate study and fulfilling all graduation requirements.

Certification

A recognition of professional achievement bestowed by an outside organization.

Class Load

The number of credit hours carried by a student each semester.

Class Standing

A measurement of achievement based on the number of credit hours earned. Students with 90 or more credits are seniors. Juniors have 60 or more credits, and sophomores have at least 30 credits.

College Parallel Program

A program of study offered at Vocational, Technical and Adult Education Colleges and UW System Centers in which the courses meet the requirements and standards of courses offered at the university.

Concentration

A component within a degree program that examines a selected area of the student's chosen professional field in greater detail. A concentration may be part of the university's planned offerings or designed by the student.

Corequisite

A course that must be taken at the same time as another course.

Credit Hour

A measure of academic work. One credit hour usually represents one hour of class time per week plus two hours of out of class study.

Credit Load

The number of credits a student registers for during a semester.

Degree Program

A planned program of study leading to a bachelor's degree.

Degree-Seeking Student

A student who has been admitted to a degree program and is seeking a bachelor's or master's degree.

Disadvantaged

Deprived of basic social rights and security through poverty, discrimination, or other unfavorable circumstances.

Educationally Disadvantaged

Deprived of a socially adequate education through poverty, discrimination, or other unfavorable circumstances.

Elective

A course taken at the choice of the student. If the electives are in the general education component of a degree program, they must be general education courses.

Emphasis

A designated group of courses within a degree program that affords increased exposure to a specific area in the student's chosen professional field.

Full Time Student

An undergraduate student who enrolls for at least 12 credits during the fall or spring semester, or one credit per week of study during the summer session.

General Education Requirement

A component of a degree program that provides a broad-based education with required course work in communication skills, analytic reasoning, health and physical education, humanities and the arts, social and behavioral sciences, natural sciences, and technology.

Good Standing

Maintaining an academic record that meets UW-Stout's requirements; eligible to continue at or return to the university, or to transfer to another institution.

Grade Point

The numerical value given to letter grades, based on an "A" receiving four points, a "B" three points, and so on.

Grade Point Average (GPA)

The numerical value assigned to a student's scholastic average, computed by dividing the total grade points by the total credit hours attempted.

Grant

Financial assistance that does not have to be repaid.

Hold

A barrier placed on a student's ability to register for classes as a result of unpaid monetary obligation or other action by the university.

Incomplete

The grade assigned only if a student is temporarily unable to complete course requirements because of unusual circumstances.

Independent Study

A course of study designed by a student and undertaken outside the classroom, under the supervision of one or more faculty.

Interdisciplinary

Drawing on two or more disciplines in a single course or program.

Internship

Work in a company or agency related to a student's degree program and career plans, usually for academic credit and often also for payment.

Major

A planned program of study leading to a bachelor's degree. Term is often used interchangeably with degree program.

Major studies

A component within a degree program that provides fundamental education for a particular career discipline.

Minor

A sequence of related courses consisting of 15 or more semester hours of credit.

Practicum

Directed work experience related to a program of study.

Prerequisite

A course or experience that must be successfully completed before enrollment in a designated course.

Professional Electives

Required credits that are not prescribed by the program by designation of a specific course, but that are professional and specific in their content as they pertain to the major.

Readmission

An appeal procedure for students who have been dismissed or suspended, administered through the Student Affairs Office.

Re-Entry

An enrollment procedure followed by students who were previously enrolled in good standing at UW-Stout but whose attendance was interrupted for two or more consecutive semesters.

Registration

The process of enrolling in and paying for courses each semester.

School

An administrative division of the university housing academic departments, degree programs and other administrative units. At UW-Stout these are the School of Education and Human Services, the School of Home Economics, the School of Industry and Technology, and the School of Liberal Studies.

Selectives

A group of courses from which a student must choose a prescribed number of credits to meet a program requirement.

Semester

A unit of time, generally 16 weeks long, in the academic calendar.

Specialization

A specialization is a program of study, with carefully constructed learning goals and experiences, and evaluation procedures. UW-Stout offers specializations in Futures Studies, International Studies, Professional Writing, Public Relations/Public Information, and Training and Human Resource Development.

Suspension

To be excluded from the university as a penalty for failure to meet academic or behavioral standards.

Teaching Major/Minor

A state-approved program for teacher certification for teaching at the secondary and/or elementary level.

Transcript

A copy of a student's permanent academic record.

Transfer Credit

Academic credit earned at another accredited institution and accepted toward a UW-Stout degree.

Tuition

The amount of money that must be paid for a course.

Degree Programs



General Education Requirements

Introduction

Each degree program at UW-Stout has a general education component. This component is designed to provide you with knowledge and skills in communication, analytical reasoning, health and physical education, humanities and the arts, social and behavioral sciences, natural sciences and technology.

The university also requires students to take courses to learn about the diverse cultures that make up the United States. With careful planning, some of the general education courses and diversity courses may overlap. That is, you may take a course that meets both general education and diversity requirements. While the credits you earn count once toward graduation, they may be used to satisfy requirements in these two areas.

General Education Credit Distribution

A. Communication Skills 8 Credits

326-101	Freshman English – Composition <i>or</i>	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing <i>or</i>	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning 6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts, and philosophy. When external accreditation standards warrant a depth requirement with sequenced courses, the nine credits must be taken from two or more areas.

E. Social and Behavioral Sciences 9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology. When external accreditation standards warrant a depth requirement with sequenced courses, the nine credits must be taken from two or more areas.

F. Natural Sciences (with Lab) 4 Credits

G. Technology 2 Credits

H. General Education Electives 0–6 Credits

Courses must be from categories A, B, D, E and F.

Total 40-46 Credits

Some degree programs have specific general education courses that must be taken in order to satisfy certification, accreditation or prerequisite standards. These exceptions are noted in the general education requirements of each program.

Course Description Codes

In the course description section of this bulletin, general education courses are coded **GE** to identify which category the course is from. The letters which follow **GE** indicate the particular general education category the course applies to, as indicated in the following chart.

GECOMMSK WRIT = Communication Skills – Writing
GECOMMSK RDG = Communication Skills – Reading
GECOMMSK SPK = Communication Skills – Speaking
GECOMMSK LNG = Communication Skills – Language

GEANRSN STAT = Analytical Reasoning – Statistics
GEANRSN MATH = Analytical Reasoning – Mathematics
GEANRSN LOG = Analytical Reasoning – Logic
GEANRSN STAT = Analytical Reasoning – Statistics

GEH/PE ACTV = Health and Physical Education – Activity
GEH/PE HLTH = Health and Physical Education – Health

GEHUMART ART/MU = Humanities and the Arts – Art History/Music Appreciation
GEHUMART CR/PRF = Humanities and the Arts – Creative/Performing Arts
GEHUMART HIST = Humanities and the Arts – History
GEHUMART LIT = Humanities and the Arts – Literature
GEHUMART PHIL = Humanities and the Arts – Philosophy

GES/BSCI ANTH = Social and Behavioral Sciences – Anthropology
GES/BSCI ECON = Social and Behavioral Sciences – Economics
GES/BSCI GEOG = Social and Behavioral Sciences – Geography
GES/BSCI POLS = Social and Behavioral Sciences – Political Science
GES/BSCI PSYC = Social and Behavioral Sciences – Psychology
GES/BSCI SOC = Social and Behavioral Sciences – Sociology
GENSCI LFSC = Natural Sciences – Life Sciences
GENSCI LFSC LAB = Natural Sciences – Life Sciences Laboratory
GENSCI PHYS = Natural Sciences – Physical Science
GENSCI PHYS LAB = Natural Sciences – Physical Science Laboratory

GETECH = Technology

Ethnic Studies Requirements and Codes

Since fall 1990, all students entering UW-Stout are required to satisfy an ethnic studies requirement for graduation. All students must take 6-9 credits in classes that meet the requirement. The courses are categorized as "A," "B," or "C" level and are coded **ES-A**, **ES-B** or **ES-C** in the course description section of this bulletin.

ES-A courses directly address diversity in American culture. **ES-B** courses focus on a subject other than diversity, such as business, education or history. However, in the context of the subject area, the course will emphasize an understanding and appreciation of diversity. The primary goal of **ES-C** courses is to teach a professional skill or theory though the courses include a multicultural component.

Students are required to take either:

1. Two **ES-A** courses *or*
2. One **ES-A** course and one **ES-B** course *or*
3. One **ES-A** course and two **ES-C** courses *or*
4. One **ES-B** course and two **ES-C** courses *or*
5. Two **ES-B** courses and one **ES-C** course.

Transfer students who have fulfilled the ethnic studies requirement at another UW System university are exempt from meeting UW-Stout's criteria.

APPAREL DESIGN/MANUFACTURING

Introduction

Students in the Apparel Design/Manufacturing program may select one of two concentrations: apparel design or apparel manufacturing. In addition, students select a minor, specialization or a 22-credit emphasis area. The specialized curriculum provides students with the theory, technology and application skills necessary for apparel design and production.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	29 credits
Concentrations	30 credits
Electives	1 credit
Minor, Specialization or Emphasis Area	22 credits

A grade of 2.0 or better must be obtained in required courses with an overall grade point average of 2.5 or better needed for graduation.

Each student is required to take 29 credits from the major courses and then select from any of the following to complete the professional education requirements for the degree:

1. Apparel Design Concentration requirements plus an appropriate minor, specialization, or 22-credit emphasis area *or*
2. Apparel Manufacturing Concentration requirements plus an appropriate minor, specialization or 22-credit emphasis area.

Minors which would be appropriate for this major are art, business administration, computer science, economics, journalism or speech.

Emphasis areas which would be appropriate are Retail Merchandising and Management, Graphic Communications, or an emphasis in Apparel Design/Manufacturing other than your concentration. Specializations such as Training and Human Resource Development and International Studies are also appropriate. Another option is a semester of study at the American College in London—see Opportunities for Study Abroad, page 16, for details.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition <i>or</i>	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing <i>or</i>	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

354-130 Elementary Statistics (<i>for Apparel Manufacturing Concentration</i>)	2
<i>Remaining courses must be from areas including math, logic, statistics and computer science.</i>	

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

320-210 Principles of Economics I	3
<i>Remaining courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.</i>	

F. Natural Sciences (with Lab)

4 Credits

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must be from categories A, B, D, E and F.

Major Studies

29 credits required

214-120 Introduction to Apparel, Textiles and Merchandising	2
214-140 Textiles	3
214-166 Apparel Construction	3
214-202 Quality Analysis of Sewn Products	3
214-274 Apparel Manufacturing	3
214-275 Apparel Grading/Marker Making	3
214-280 Flat Pattern	3
214-374 Apparel Manufacturing Laboratory	3
214-519 International Economic Trends in Textiles and Clothing	3
214-550 Textile Evaluation	3

Concentrations**Apparel Design 30 credits**

214-112	Fashion Forecasting	3
214-285	Design for Apparel Production	3
214-368	Experimental Clothing	3
214-581	Functional Clothing Design	3
214-594	Knit Design and Technology	3
214-610	History of Costume – Ancient to European	3
214-611	History of Fashion – 19th Century to Present	3
214-617	Social/Psychological Aspects of Clothing	3
214-680	Draping	3
214-685	Apparel Design Studio	3

Apparel Manufacturing 30 credits

150-200	Production/Operations Management	3
150-520	Quality Assurance	3
150-540	Time and Motion Study	3
160-304	Principles of Management	3
160-330	Principles of Marketing	3
214-227	Basic Merchandising	3
214-670	International Textile/Apparel Sourcing	3
214-674	Apparel Manufacturing: Computer Management Systems	3
214-6XX	Apparel Manufacturing Management	3
479-582	Human Resource Management	3

Electives**1 credit required****Minor, Specialization or Emphasis Area****22 credits required****Optional Experience and Academic Opportunities**

214-398	Field Experience	1-2
214-449	Clothing, Textiles and Design Cooperative Education	3-6
214-477	Study Abroad – American Fashion College	16
214-605	International Study Tour to the Fashion Industries	1-6
214-619	National Study Tour to the Fashion Industry	1

APPLIED MATHEMATICS

Introduction

The role of mathematics in our highly scientific-technological society is basic and essential. Mathematical thought and modeling are valued tools in our sophisticated industrial community. The application of mathematics to industry and business to meet society's needs is increasing. This growth and demand continues to create a need for graduates with training in Applied Mathematics.

The program in Applied Mathematics provides 1. a strong foundation in academic mathematics; 2. computational concepts and techniques in computer science, statistics and mathematical models; 3. experiences in areas where mathematics, computers and/or statistics are utilized; and 4. a broad offering of liberal arts courses.

At the completion of the freshman year or after entering the Applied Mathematics program, all students prepare and submit a tentative plan or guide for their undergraduate program. This plan is developed through consultation with an academic adviser and the Program Director. The ultimate plan is developed to meet the student's professional objectives and goals through the appropriate selection of courses within the major studies and the desired related area in which mathematics, computers and/or statistics are used.

Off-campus work in an approved position using computer and/or statistical techniques in the analysis and solution of real world problems is a valuable option within this major. Students receive salaried appointments and course credits. This experience can be included within the program and completed during the junior or senior year. The duration of the experience is for periods of a summer or a summer plus one semester.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	43-45 credits
Major Studies	53 credits
Concentration	22-27 credits
Electives	1-6 credits

In fulfilling the necessary competencies for a degree, a student may complete the requirements for a minor in Business Administration, Economics, Physics, Chemistry, Biology, Computer Science or Speech. It is the student's responsibility to obtain approval for the minor from the department offering it.

Program Requirements

General Education

43-45 credits required

A. Communication Skills

8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning

7-8 Credits

354-144	Computer Science I	3
355-153	Calculus I or	
355-156	Calculus and Analytic Geometry I	4-5

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

*Students enrolled in the **Business Management Concentration** should take:*

320-210	Principles of Economics I	3
<i>Remaining courses must be from three or more areas including anthropology, geography, political science, psychology and sociology.</i>		

F. Natural Sciences (with Lab)

4-5 Credits

See selected concentration for course selection.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies**53 credits required****Foundational Mathematics****25 credits***Credit distribution based on the concentration selected.***Techniques – Analysis**

355-154	Calculus II or	
355-157	Calculus and Analytic Geometry II	4-5
355-158	Calculus III	3
355-255	Differential Equations	3

*Select 6-9 credits from the following:***Techniques – Algebra**

355-275	Linear Algebra	3
355-370	Modern Algebra I	3

Theory of Algebra

355-371	Modern Algebra II	3
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*Select 6-9 credits from the following:***Geometric Applications**

355-262	Modern Geometry	3
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Theoretical Analysis

355-350	Vector Analysis	3
355-450	Real Analysis I	3
355-451	Real Analysis II	3

*Select 1-3 credits from the courses above not already taken.***Computational Mathematics****28 credits****Mathematical Models**

354-490	Mathematical Models I	2
354-491	Mathematical Models II	2

Statistical Methods*See concentration for appropriate course selection.***Statistical Theory***See concentration for appropriate course selection.***Computer Language***See concentration for appropriate course selection.***Computer Methods***See concentration for appropriate course selection.***Concentrations****22-27 credits required**

- **Actuarial Science**
- **Applied Physics**
- **Applied Research**
- **Architectural Design**
- **Business Management**
- **Computer Graphics**
- **Computer Systems Integration**
- **Food Production Quality Control**
- **Industrial Management**
- **Mechanical Design**
- **Mechanical Design – Drafting**
- **Numerical Control**
- **Scientific Programming**
- **Software Development**

Electives**1-6 credits***Select 1-6 additional elective credits from courses listed under the major, concentration or minor to complete the degree requirements of 124 credits.***Actuarial Science Concentration***Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies–page 26:***Statistical Methods***Select 4 credits from the following:*

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory*Select 8 credits from the following:*

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language*Select 6 credits from the following:*

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods*Select 6 credits from the following:*

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3

Actuarial Science Concentration Requirements**23 credits**

326-XXX	Any Writing	3
354-590	Topics: Actuarial Exam I Prep	2
354-590	Topics: Actuarial Exam II Prep	2
<i>Select 4 credits from:</i>		
3XX-XXX	Any Foreign Language	1-4

Concentration Selectives*Select 12 credits from the following:*

160-206	Introduction to Financial Accounting	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-340	Business Finance	3
160-355	Principles of Risk Management	3
320-435	Money, Banking, Financial Markets	3
354-546	Topic: Simulation (proposed)	3
354-590	Topics: Actuarial Exam III Prep	2

Applied Physics Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530 Statistical Methods	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3

Computer Language

Select 6 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
354-448 Software Engineering	3

► Applied Physics Concentration Requirements 25 credits

311-135 College Chemistry I	5
372-282 University Physics II	5
372-380 Electromagnetic Fields	3
372-531 Statics	3
372-533 Dynamics	3

Concentration Selectives

Select at least 6 credits from:

184-270 Circuit Analysis	4
184-280 Networks	4
184-551 Introduction to Microprocessors	3
300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	6
372-527 Solid State Physics	3
372-529 Atomic and Nuclear Physics	3
372-535 Optics	3

Applied Research Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies:

Statistical Theory

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3

Computer Language

Select 6 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
354-448 Software Engineering	3

► Applied Research Concentration Requirements 22 credits

326-XXX Any Writing	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Concentration Selectives

Select at least 15 credits from one of the following blocks:

Operational Systems

300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	8
354-535 Applied Stochastic Processes I	2
354-536 Applied Stochastic Processes II	2
354-546 Topics: Simulation (proposed)	3

Psychological Techniques

300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	6
479-190 Psychological Research Methods	4
479-390 Experimental Psychology	4
479-690 Psychological Measurement	3

Marketing Systems

160-330 Principles of Marketing	3
160-679 Marketing Research	3
300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	6
320-470 Economic Model-Building and Forecasting	3

Packaging Systems

181-280 Packaging Fundamentals	2
181-380 Consumer Packaging Systems	3
181-480 Packaging Design and Evaluation	3
300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	7

Architectural Design Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3

► Architectural Design Concentration Requirements 27 credits

182-233	Architectural Design I	3
182-335	Architectural Design II	3
183-110	Drafting	2
183-290	Mechanics of Solids I or	
372-531	Statics	3
183-592	Mechanics of Machinery I or	
372-533	Dynamics	3
311-135	College Chemistry I	5
372-282	University Physics II	5

Concentration Selectives

Select at least 3 credits from the following:

182-558	Structural Systems – Wood and Steel	3
183-212	Descriptive Geometry	3
183-636	Computer Assisted Design Problems	2
184-270	Circuit Analysis	4
184-280	Networks	4
184-583	Fundamentals of Control	4
184-683	Control Systems	3
300-X49	Cooperative Education Program in Liberal Studies or	
354-475	Applied Mathematics Internship or	
355-X49	Applied Mathematics: Cooperative Education Internship	3

Business Management Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 9 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods

Select 9 credits from the following:

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-443	Database Systems Manipulation and Design	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3
354-546	Topics: Simulation (proposed)	3

► Business Management Concentration Requirements 24 credits

160-206	Introduction to Financial Accounting	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-312	Cost Accounting or	
160-335	Accounting for Management Decisions	3
160-330	Principles of Marketing	3
320-215	Principles of Economics II	3
326-515	Technical Writing	3

Concentration Selectives

Select at least 6 credits from the following blocks:

Finance

160-318	Business Law I	3
160-320	Income Tax Accounting	3
160-340	Business Finance	3
160-355	Principles of Risk Management	3

Economics

320-421	Collective Bargaining and Labor Relations	2
320-435	Money, Banking, Financial Markets	3
320-470	Economic Model-Building and Forecasting	3

General

150-600	Organizational Leadership	3
160-318	Business Law I	3
160-679	Marketing Research	3

Additional Option

300-X49	Cooperative Education Program in Liberal Studies or	
354-475	Applied Mathematics Internship or	
355-X49	Applied Mathematics: Cooperative Education Internship	6

Computer Graphics Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Theory

Select 6 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods

354-341	Data Structures	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-448	Software Engineering	3

► Computer Graphics Concentration Requirements 24 credits

354-343	Mathematical Foundations of Computer Graphics	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-545	Image Processing	3
354-XXX	Solid Modeling	3

Select 6 credits from:

3XX-XXX	Any Biology, Chemistry and/or Physics	6
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Concentration Selectives

Select 3 credits from either option:

Option 1

181-504	Computer Aided Manufacturing	3
181-505	Robotics	2
183-234	Computer Assisted Design and Drafting	2

Option 2

300-X49	Cooperative Education Program in Liberal Studies or	
354-475	Applied Mathematics Internship or	
355-X49	Applied Mathematics: Cooperative Education Internship	3

Computer Systems Integration Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-342	Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3

► Computer Systems Integration Concentration Requirements 24 credits

184-270	Circuit Analysis	4
184-371	Solid State Electronics	3
184-473	Digital Logic and Switching	3
184-542	Computer Applications in Electronics	3
184-574	Microprocessor Fundamentals	3
184-575	Microprocessor Interfacing	3
372-282	University Physics II	5

Food Production Quality Control Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3

► Food Production Quality Control Concentration Requirements 27 credits

150-520	Quality Assurance	3
184-551	Introduction to Microprocessors	3
308-306	General Microbiology	4
308-506	Food Microbiology	3
311-136	College Chemistry II	5
311-531	Quantitative Analysis III	3
311-535	Instrumental Methods of Analysis	3

Concentration Selectives

Select 3 credits from the following:

150-505	Product and Inventory Control	3
181-102	Manufacturing Materials and Processes I	3
181-280	Packaging Fundamentals	2
181-380	Consumer Packaging Systems	3
229-212	Nutrition	3
229-240	Food Science	4
229-638	Experimental Foods	3
229-650	Food Processing	3
300-X49	Cooperative Education Program in Liberal Studies or	
354-475	Applied Mathematics Internship or	
355-X49	Applied Mathematics: Cooperative Education Internship	3
308-332	Genetics and	
308-333	Genetics Laboratory	3
311-515	Food Chemistry	3

Industrial Management Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530	Statistical Methods	3
354-531	Design of Experiments I	2
354-532	Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-535	Applied Stochastic Processes I	2
354-536	Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145	Computer Science II	3
354-240	FORTRAN Programming	3
354-241	Assembly Language Programming	3
354-246	Computer Programming – COBOL	3
354-342	Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341	Data Structures	3
354-343	Mathematical Foundations of Computer Graphics	3
354-441	Computer Organization	3
354-442	Systems Programming	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
354-448	Software Engineering	3

► Industrial Management Concentration Requirements 22 credits

150-200	Production/Operations Management	3
150-500	Engineering Economy	2
150-505	Product and Inventory Control	3
150-520	Quality Assurance	3
160-206	Introduction to Financial Accounting	3
160-410	Manufacturing Cost Analysis	3

Select 5 credits from:

3XX-XXX	Any Biology, Chemistry and/or Physics	5
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Mechanical Design Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530 Statistical Methods	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3
354-535 Applied Stochastic Processes I	2
354-536 Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-448 Software Engineering	3

► Mechanical Design Concentration Requirements

23 credits

183-110 Drafting	2
183-290 Mechanics of Solids I	3
183-291 Mechanics of Solids II	3
183-532 Mechanical Design	4
183-592 Mechanics of Machinery I	3
183-593 Mechanics of Machinery II	3
372-282 University Physics II	5

Mechanical Design – Drafting Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Methods

Select 3 credits from the following:

354-530 Statistical Methods	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3
354-535 Applied Stochastic Processes I	2
354-536 Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
354-448 Software Engineering	3

► Mechanical Design – Drafting Concentration Requirements

26 credits

183-110 Drafting	2
183-212 Descriptive Geometry	3
183-234 Computer Assisted Design and Drafting	2
183-290 Mechanics of Solids I or	
372-531 Statics	3
183-592 Mechanics of Machinery I or	
372-533 Dynamics	3
311-135 College Chemistry I	5
372-282 University Physics II	5

Concentration Selectives

Select at least 3 credits from the following:

183-532 Mechanical Design	4
183-537 Mechanical Design Drafting	2
183-593 Mechanics of Machinery II	3
183-636 Computer Assisted Design Problems	2
184-270 Circuit Analysis	4
184-280 Networks	4
184-371 Solid State Electronics	3
184-542 Computer Applications in Electronics	3
184-583 Fundamentals of Control	4
300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	3

Numerical Control Concentration**Statistical Methods**

Select 3 credits from the following:

354-530 Statistical Methods	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3
354-535 Applied Stochastic Processes I	2
354-536 Applied Stochastic Processes II	2

Computer Language

Select 6 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 12 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
354-448 Software Engineering	3

► Numerical Control Concentration Requirements 22 credits

150-520 Quality Assurance	3
181-102 Manufacturing Materials and Processes I	3
181-504 Computer Aided Manufacturing	3
181-505 Robotics	2
184-551 Introduction to Microprocessors	3
372-282 University Physics II	5

Concentration Selectives

Select at least 3 credits from the following:

181-280 Packaging Fundamentals	2
181-380 Consumer Packaging Systems	3
181-510 Manufacturing Systems	3
181-515 Metallurgy	3
181-537 Numerical Control in Manufacturing	3
300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	3
311-541 Chemistry of Materials	4

Scientific Programming ConcentrationSelect the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:**Statistical Methods**

Select 3 credits from the following:

354-530 Statistical Methods	3
354-531 Design of Experiments I	2
354-532 Design of Experiments II	2

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3
354-535 Applied Stochastic Processes I	2
354-536 Applied Stochastic Processes II	2

Computer Language

Select 9 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 9 credits from the following:

354-341 Data Structures	3
354-343 Mathematical Foundations of Computer Graphics	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-448 Software Engineering	3
354-545 Image Processing	3

► Scientific Programming Concentration Requirements 23 credits

354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
372-282 University Physics II	5
372-531 Statics	3
372-533 Dynamics	3

Concentration Selectives

Select 6 credits from either option:

Option 1

184-280 Networks	4
184-473 Digital Logic and Switching	3
372-380 Electromagnetic Fields	3

Option 2

300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	6

Software Development Concentration

Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies—page 26:

Statistical Theory

Select 3 credits from the following:

354-331 Probability and Mathematical Statistics I	3
354-332 Probability and Mathematical Statistics II	3

Computer Language

Select 9 credits from the following:

354-145 Computer Science II	3
354-240 FORTRAN Programming	3
354-241 Assembly Language Programming	3
354-246 Computer Programming – COBOL	3
354-342 Survey of Programming Languages	3

Computer Methods

Select 6 credits from the following:

354-341 Data Structures	3
354-441 Computer Organization	3
354-442 Systems Programming	3
354-446 Numerical Analysis I	3
354-447 Numerical Analysis II	3
354-545 Image Processing	3

Select 6 additional credits from the areas above.

► Software Development Concentration Requirements 24 credits

326-515 Technical Writing	3
354-343 Mathematical Foundations of Computer Graphics	3
354-448 Software Engineering	3
354-XXX Advanced Software Engineering	3

Select 6 credits from:

3XX-XXX Any Biology, Chemistry and/or Physics	6
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Concentration Selectives

Select 6 credits from one programming application option:

Option 1

354-246 Computer Programming – COBOL	3
354-443 Database Systems Manipulation and Design	3
354-342 Survey of Programming Languages	3

Option 2

300-X49 Cooperative Education Program in Liberal Studies or	
354-475 Applied Mathematics Internship or	
355-X49 Applied Mathematics: Cooperative Education Internship	6

APPLIED TECHNOLOGY

Introduction

Applied Technology is based on a foundation of mathematics, science and applied engineering. Program concentrations include Microelectronics, Material and Process Engineering, and Manufacturing Systems. These have been developed to satisfy the needs of industry. Course work requires an application of engineering theory and practice. Graduates are applications-oriented individuals who are prepared to meet the challenges faced by industry.

This degree program requires each student to complete one year each in college calculus and analytic geometry, chemistry and physics. Therefore, the high school student should prepare with a strong background in mathematics and science. High school course work in electronics, computer programming and technology education is suggested.

Microelectronics This concentration enables the graduate to apply knowledge of science and mathematics to solve industrial problems in the area of electronics. Areas of specialization include computers, microprocessors, communication and controls.

Material and Process Engineering Graduates in this field use their knowledge of materials to 1. establish material standards based upon industrial needs; 2. design, construct and utilize material test equipment; 3. evaluate material properties; 4. select the appropriate materials after analysis of the engineering, environmental, and production requirements to produce the desired product; 5. establish process procedures and specifications appropriate for a specific material or product; 6. evaluate, select and/or modify processing methods to satisfy production requirements; and 7. help design products that utilize materials well and are easy to manufacture.

Manufacturing Systems Graduates apply their knowledge of Computer Aided Manufacturing (CAM), Computerized Numerical Control (CNC), Computer Aided Design (CAD), Flexible Manufacturing Systems, Robotics, and Group Technology in an industrial environment. Work may include the design and implementation of manufacturing systems utilizing the newest technologies. These positions may be in the manufacturing engineering department or graduates may report directly to a manufacturing project manager, senior manufacturing systems analyst or senior industrial engineer.

Note: The dynamic nature of today's technology requires frequent changes in upper level courses. Consult with your adviser or program director for recently approved program changes.

General Requirements

Bachelor of Science Degree

Total for graduation	124
General Education	47
Major Studies	20
Concentrations	55-59

Program Requirements

General Education

47 credits required

A. Communication Skills 8 Credits

326-101 Freshman English – Composition <i>or</i>	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing <i>or</i>	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning 10 Credits

355-156 Calculus and Analytic Geometry I	5
355-157 Calculus and Analytic Geometry II	5

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) 5 Credits

372-281 University Physics I	5
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G. Technology 2 Credits

Courses will be chosen in consultation with the program director, based on the concentration.

H. General Education Electives 2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

20 credits required

181-504 Computer Aided Manufacturing	3
311-135 College Chemistry I	5
354-330 Introduction to Probability and Statistics	4
354-144 Computer Science I	3
372-282 University Physics II	5

Concentrations**55-59 credits required****Microelectronics****57 credits**

183-290	Mechanics of Solids I	3
183-291	Mechanics of Solids II	3
183-592	Mechanics of Machinery I	3
184-270	Circuit Analysis	4
184-280	Networks	4
184-371	Solid State Electronics	3
184-381	Linear Electronic Circuits	3
184-473	Digital Logic and Switching	3
184-474	Digital Electronics	3
184-482	Electronic Communication Fundamentals	3
184-542	Computer Applications in Electronics	3
184-574	Microprocessor Fundamentals	3
184-575	Microprocessor Interfacing	4
184-583	Fundamentals of Control	4
184-586	Instrumentation	3
355-255	Differential Equations	3
372-380	Electromagnetic Fields	3

*Select two credits of technical electives in consultation with adviser.***Material and Process Engineering****55-61**

150-150	Industrial Organization	2
181-103	Manufacturing Materials and Processes II	3
181-301	Technology, Resources, Environment or	
311-553	Environmental Chemistry	2-3
181-340	Plastics Processing	3
181-515	Metallurgy	3
183-205	Design for Industry	3
183-620	Research and Development	2
183-621	Research and Development Laboratory	1
184-204	Electricity/Electronics Fundamentals	3
184-551	Introduction to Microprocessors	3
311-136	College Chemistry II	5
311-201	Organic Chemistry Lecture	3
311-203	Organic Chemistry Laboratory	1
311-501	Physical Chemistry Lecture	3
311-503	Physical Chemistry Laboratory	1
311-541	Chemistry of Materials	4
311-X99	Independent Study	1-3
355-255	Differential Equations	3

Select 6 credits from the following:

181-222	Industrial Ceramics	3
181-230	Metal Machining Technology	3
181-320	Production Sheet Metal	3
181-357	Metal Casting Processes	3
181-365	Production Welding Technology	3

Select 3-6 credits from the following to bring credits to at least 124:

181-X49	Cooperative Education Experience or	
181-X97	Field Experience	1-6
181-X99	Independent Study	1-3
311-204	Organic Chemistry II – Lecture	3
311-206	Organic Chemistry II – Laboratory	1
372-325	Strength of Materials	3
372-527	Solid State Physics	3

Manufacturing Systems**56 credits**

150-150	Industrial Organization	2
181-102	Manufacturing Materials and Processes I	3
181-103	Manufacturing Materials and Processes II	3
181-230	Metal Machining Technology	3
181-301	Technology, Resources, Environment	2
181-340	Plastics Processing	3
181-357	Metal Casting Processes	3
181-365	Production Welding Technology	3
181-505	Robotics	2
181-510	Manufacturing Systems	3
181-537	Numerical Control in Manufacturing	3
182-375	Wood and Wood Fiber Composite Materials	3
183-110	Drafting	2
183-205	Design for Industry	3
183-234	Computer Assisted Design and Drafting	2
183-311	Technical Drafting	3
184-204	Electricity/Electronic Fundamentals	3
184-551	Introduction to Microprocessors	3
184-553	Instrumentation and Control	3

Select 4 credits from the following:

130-504	Communications and Information Systems	1-3
150-200	Production/Operations Management	3
150-500	Engineering Economy	2
150-505	Product and Inventory Control	3
150-510	Production Processing	3
150-514	Industrial Enterprise Practicum	3
150-520	Quality Assurance	3
150-530	Material Handling	3
150-540	Time and Motion Study	3
150-550	Plant Layout	3
181-222	Industrial Ceramics	3
181-280	Packaging Fundamentals	2
181-321	Production Finishing Systems	3
181-380	Consumer Packaging Systems	3
181-489	Business and Industrial Internship	2-8
181-508	Industrial Metrology	3
181-513	Manufacturing Processes: Wood Products	3
181-515	Metallurgy	3
181-X49	Cooperative Education Experience or	
181-X97	Field Experience	1-6
181-620	Research and Development	2
183-621	Research and Development – Laboratory	1
183-636	Computer Assisted Design Problems	2
185-260	Introduction to Fluid Power	2
185-361	Industrial Hydraulics	2
185-362	Industrial Pneumatics	2
214-140	Textiles	3
354-241	Assembly Language Programming	3
372-518	Microprocessors and Applications	3

ART

Introduction

The Bachelor of Fine Arts in Art offers study in Studio Art or concentrations in Industrial Design, Interior Design or Graphic Design. The curriculum provides students with experiences in studio work, art history, professional studies and general studies. An understanding of liberal studies, art history, the present status of art and design, and an inquisitive attitude toward experimentation in problem-solving will move students to a professional level in their selected concentration. The experienced art and design faculty ensure current course content and serve as advisers to the students in respective areas. A required midprogram review offers students a general view of their performance. Extensive library resources and the art and design department slide library are significant assets. Foreign study opportunities allow students variety in cultural experiences. Opportunities in internships and cooperative education supplement educational theory and practice in a setting with working professionals. A 2.5 grade point average and a 2.0 or better in art and design department courses is required to complete this Bachelor of Fine Arts degree. Those who choose major studies in Studio Art must present an exhibition of their work during their senior year. All students who concentrate in design must present a portfolio of their work in the final semester.

General Requirements

Bachelor of Fine Arts Degree

Total for graduation	127-129 credits
General Education	42 credits
Major Studies	16 credits
Concentrations or Studio Art	69-71 credits

Definitions

UW-Stout offers two concentrations that are similar in name. "Interior Design" (B.F.A. in Art) and "Interior Decorating" (B.S. in Retail Merchandising and Management) are different, and offer students a choice of two professional areas.

Interior designers produce functional and meaningful interior environments (*residential, commercial and public spaces*) by integrating human factors, art and design concepts, space planning, knowledge of architecture, building construction, codes, specifications, materials and furnishings.

The interior design concentration prepares graduates to solve interior design problems, including the initial design and remodeling of structures as part of an architectural design team or as a consultant.

Interior decorators furnish and accessorize existing or planned spaces using knowledge of color, fabrications, interior decoratives and furniture, fixtures and equipment to accommodate each client's individual taste.

The interior decorating concentration in the Retail Merchandising and Management program, page 64, provides graduates with business and decorating skills to enter the marketplace in retailing, interiors studios, or their own business, including consulting.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including creative arts (excluding courses with a 304 prefix), history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab)

4 Credits

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

16 credits required

304-100	Drawing I	3
304-101	Fundamentals of Design	3
304-102	Introduction to Art and Design	1
304-500	Drawing II	3
304-523	Survey of Art – Ancient through Medieval	3
304-524	Survey of Art – Renaissance through 20th Century	3

Studio Art

71 credits required

The student may complete the following sequence of courses in studio art to complete the art degree without concentration or select a concentration in graphic design, industrial design, or interior design.

Studio and Related Requirements

Note: Two "advanced" studios may be deleted (except Drawing)

120-504	Elementary Photography	2
304-145	The Practice of Art	2
304-501	Life Drawing I	3
304-502	Life Drawing II or	3
304-500	Drawing II (repeated)	3
304-509	Painting I	3
304-510	Painting II	3
304-511	Sculpture I	3
304-512	Sculpture II	3
304-513	Ceramics I	3
304-514	Ceramics II	3
304-515	Art Metal I	3
304-516	Art Metal II	3
304-517	Printmaking I	3
304-518	Printmaking II	3
304-545	Senior Seminar	1
304-607	Aesthetics (Senior Year)	3
304-XXX	Three additional Art History courses (except 304-202)	9

one must be a modern art history.

Studio and Related Selectives (24 credits)

Nine additional advanced credits must be taken in one of these areas: painting, ceramics, sculpture, art metals, drawing or printmaking to establish a studio focus.

Concentrations

Graphic Design 69 credits

304-210	Letter Form Design	3
304-300	Design Theory and Methods	3
304-305	Presentation Techniques	3
304-310	Graphic Design I	3
304-360	Graphic Design II	3
304-480	Senior Project-Graphic Design	4
304-501	Life Drawing I	3
304-503	Design	3
304-517	Printmaking I (serigraphy recommended)	3
304-XXX	Computer Imaging	3

Design Studio

Select 6 credits from the following:

(one must be 304-380 or 304-410)

304-380	Signage and Exhibition Design	3
304-410	Product and Packaging Graphics	3
304-XXX	Publication Design	3
304-XXX	Information Design	3
304-XXX	Advertising Design	3
XXX-XXX	Other courses approved by program director.	

Art Studio

Select 13 credits from the following:

304-500	Drawing II	3
304-502	Life Drawing II	3
304-518	Printmaking II	3
304-509	Painting I	3
304-510	Painting II	3
304-511	Sculpture I	3
304-512	Sculpture II	3
304-513	Ceramics I	3
304-514	Ceramics II	3
304-515	Art Metal I	3
304-516	Art Metal II	3
XXX-XXX	Other courses approved by program director.	

Additional Art History Requirements

304-319	Evolution of Design	3
304-XXX	Any Art History (except 304-202)	3

Technical

120-504	Elementary Photography	2
130-140	Graphic Arts	2
130-251	Composition	3
181-280	Packaging Fundamentals	2

Select 4 credits from the following:

120-605	Advanced Photography	2
120-630	Audio/Film Production Fundamentals	3
120-645	Color Photography	2
130-355	Line and Halftone Photography	2
130-366	Image Transfer	3
130-509	Business Applications in Desktop Publishing	1
130-545	Publications Production	2
160-330	Principles of Marketing	3
160-370	Principles of Advertising	3
479-579	Public Relations	2
XXX-XXX	Other courses approved by program director.	

Industrial Design**69 credits****Studio and Related Requirements**

304-300	Design Theory and Methods	3
304-305	Presentation Techniques	3
304-310	Graphic Design I	3
304-330	Industrial Design I	3
304-335	Product Form Design	3
304-340	Industrial Design II	3
304-360	Graphic Design II	3
304-405	Advanced Presentation Techniques for Designers	3
304-430	Industrial Design III	4
304-440	Industrial Design IV	4
304-503	Design	3
304-511	Sculpture I	3

Art Studio*Select 12 credits from the following:*

304-500	Drawing II	3
304-501	Life Drawing I	3
304-509	Painting I	3
304-510	Painting II	3
304-512	Sculpture II	3
304-513	Ceramics I	3
304-514	Ceramics II	3
304-515	Art Metal I	3
304-516	Art Metal II	3
304-517	Printmaking I	3
304-518	Printmaking II	3
304-XXX	Other courses approved by program director	3

Additional Art History

304-319	Evolution of Design	3
304-XXX	Any Art History (except 304-202)	3

Technical

181-102	Manufacturing Materials and Processes I	3
181-103	Manufacturing Materials and Processes II	3
183-234	Computer Assisted Design and Drafting	2
183-XXX	Drafting	3
XXX-XXX	Other courses approved by program director	2-3

Interior Design**69 credits****Studio and Related Requirements**

304-204	Interior Design	3
304-300	Design Theory and Methods	3
304-304	Interior Design II	3
304-305	Presentation Techniques	3
304-314	Interior Design Procedures and Specifications	3
304-315	Environmental Interior Design I	3
304-316	Environmental Interior Design II	4
304-320	Interior Furniture Design	3
304-405	Advanced Presentation Techniques for Designers	3
304-503	Design	3
304-511	Sculpture I or	
304-513	Ceramics I	3
304-532	Economics of House Furnishing	3

Art Studio*Select 13 credits from the following:*

304-500	Drawing II	3
304-501	Life Drawing I	3
304-509	Painting I	3
304-510	Painting II	3
304-511	Sculpture I	3
304-512	Sculpture II	3
304-513	Ceramics I	3
304-514	Ceramics II	3
304-515	Art Metal I	3
304-516	Art Metal II	3
304-517	Printmaking I	3
304-518	Printmaking II	3
XXX-XXX	Other courses approved by program director	3

Additional Art History

304-319	Evolution of Design	3
304-533	Period Furnishings	3

Technical

182-131	Architectural Graphics	3
182-170	Light Construction Methods	2
182-233	Architectural Design I	3
214-140	Textiles	3

Select one course from the following:

182-335	Architectural Design II	3
183-234	Computer Assisted Design and Drafting	2
245-436	Commercial and Residential Lighting	2
XXX-XXX	Other courses approved by program director	

ART EDUCATION

Introduction

The Art Education program provides students with experience in liberal studies, art history, studio art and professional education. It is a Bachelor of Science degree program that prepares students for certification by the Department of Public Instruction for teaching art in elementary and secondary schools. An understanding of general studies, art history, the present status of art and the educational environment, with an inquisitive approach toward problem solving, will move students to a professional level. The experienced art and design faculty ensure current course content and serve as advisers for students. Preteaching observation, presented at the sophomore level, offers students an early involvement in elementary and secondary schools. A required mid-program review offers students a general understanding of their performance. Extensive library resources and the art and design department slide library are a significant asset. Foreign study opportunities allow students variety in cultural experiences. An optional 11 credit additional concentration in Adaptive Education is available.

General Requirements

Bachelor of Science Degree

Total for graduation	135 credits
General Education	42 credits
Major Studies	93 credits

A minimum overall grade point average of 2.75 is required for entry into student teaching and for graduation. Students must achieve a minimum grade of "C" (2.0) or better in each class and a 2.75 grade point average in all art, art education and education courses.

Art Education majors must present an exhibition of their work during the senior year, but not during the student teaching semester.

* A grade point of 2.0 or better is required.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition* or	
326-111 Freshman English – Honors I*	3
326-102 Freshman English – Reading and Related Writing* or	
326-112 Freshman English – Honors II*	3
391-100 Fundamentals of Speech*	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts†

9 Credits

120-504 Elementary Photography	2
326-XXX Any Literature	3
A remaining course must be from one of the following areas: history, music appreciation, performing arts or philosophy. † Either 338-210 Modern World must be taken under this category or 303-220 Cultural Anthropology must be taken under Category E.	

E. Social and Behavioral Sciences†

9 Credits

375-210 Government	3
479-110 General Psychology	3
A remaining course must be from one of the following areas: anthropology, economics, geography or sociology. † See previous note under category D.	

F. Natural Sciences (with Lab)

4 Credits

Choose a biology course, and either a chemistry or physics course.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

93 credits required

Art Requirements

33 credits

304-100 Drawing I	3
304-101 Fundamentals of Design	3
304-145 The Practice of Art	2
304-500 Drawing II	3
304-501 Life Drawing I	3
304-509 Painting I	3
304-511 Sculpture I	3
304-513 Ceramics I	3
304-515 Art Metal I	3
304-517 Printmaking I	3
304-545 Senior Seminar	1
304-607 Aesthetics	3

Selective Art and Design Studios

9 credits

Select studio courses from art metals, ceramics, drawing, life drawing, painting, printmaking, sculpture—3 of the 9 credits may be graphic, industrial or interior design courses.

Art History Requirements

12 credits

304-523 Survey of Art—Ancient through Medieval	3
304-524 Survey of Art—Renaissance through 20th Century	3
Select 2 additional art history courses; one must be a 20th century art course.	

Education Requirements

39 credits

305-208 Preteaching Observation (Sophomore Year)	2
305-408 Student Teaching in the Elementary School – Art	8
305-409 Student Teaching in the Secondary School – Art	8
305-XXX Introduction to Teaching Art – Elementary	3
305-XXX Introduction to Teaching Art – Secondary	3
421-303 Educational Psychology	3
421-312 Introduction to Curriculum, Methods and Assessment	2
421-326 Foundations of Education	2
421-536 Multiculturalism: Issues and Perspectives	2
421-576 Field Experience – Cross Cultural Experience	1
421-582 Secondary Reading and Language Development	2
431-630 Mainstreaming Students With Exceptional Educational Needs	3

CONSTRUCTION

Introduction

The Construction program is designed to prepare individuals for a variety of responsible positions in the field of construction.

Broad objectives of the program include developing fundamental knowledge of science, engineering, business, management, architecture and construction principles; applying scientific, technological and management principles to the solution of construction problems; and integrating diverse scientific and technical areas as they impact on the construction field.

General Requirements

Bachelor of Science Degree

Total for graduation	129 credits
General Education	46 credits
Major Studies	74 credits
Writing and Science Preparation	6 credits
Electives	3 credits

Program Requirements

General Education

46 credits required

A. Communication Skills 8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning 6 Credits

355-153 Calculus I or	
355-156 Calculus and Analytic Geometry I	4-5
<i>Remaining courses must be from areas including math, logic, statistics and computer science.</i>	

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

320-201 General Economics or	
320-210 Principles of Economics I	3
375-210 Government	3
387-110 Introductory Sociology or	
479-110 General Psychology	3

F. Natural Sciences (with Lab) 10 Credits

Select a group of physics courses:

Group 1

372-241 College Physics I and	
372-242 College Physics II	10

Group 2

372-281 University Physics I and	
372-282 University Physics II	10

G. Technology 2 Credits

Major Studies

74 credits required

Business and Management 18 credits

150-500 Engineering Economy	3
150-600 Organizational Leadership	3
160-200 Financial-Managerial Accounting – Industrial Technology or	
160-206 Introduction to Financial Accounting	3
160-304 Principles of Management	3
160-330 Principles of Marketing	3
479-582 Human Resource Management	3

Architecture, Engineering and Construction 56 credits

140-588 Construction Safety	2
160-573 Legal Aspects of Construction	3
182-131 Architectural Graphics	3
182-170 Light Construction Methods	2
182-175 Construction Materials	2
182-190 Orientation to Construction Industry	1
182-237 Architectural Technology	3
182-270 Heavy Construction Methods and Equipment	3
182-273 Concrete Technology	3
182-357 Site Engineering	2
182-538 Contract Requirements and Specifications	3
182-552 Environmental Systems – HVAC	3
182-553 Environmental Systems – Plumbing and Electrical	3
182-558 Structural Systems – Wood and Steel	3
182-559 Structural Systems – Concrete and Masonry	3
182-570 Construction Estimating I	3
182-571 Construction Estimating II	2
182-572 Management of Construction	3
182-670 Project Scheduling and Cost Control	3
182-X98 Field Experience or	
182-X49 Cooperative Education Experience	2
372-321 Statics and Strength of Materials	4

Writing and Science Preparation

6 credits required

326-320 Business Writing or	
326-515 Technical Writing	3
372-257 Introduction to Geology and Soil Mechanics	3

Electives

3 credits required

DIETETICS

Introduction

This program prepares graduates for careers in clinical and administrative dietetics, community and public health nutrition, corporate wellness, and nutrition education as well as for opportunities in the food services, business and industry.

The program is approved by the American Dietetic Association for meeting academic requirements leading toward credentials as a dietitian. In a 1993 list of professions, dietetics was cited as an occupation projected with a high employment outlook.

The dietetic student receives an education with an emphasis on the following sciences: physical and biological; behavioral and social; communication and professional. With this background, the student can move toward the community and business management of nutritional health, food service and dietetic practices.

General Requirements

Bachelor of Science Degree

Total for graduation	124-125 credits
General Education	50-51 credits
Major Studies	68 credits
Electives	6 credits

The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.

Supervised work experience must be obtained through participation in the Field Experience program.

Students must attain a grade point of 2.0 or higher in each of the courses in General Education and Major Studies. All transferred credits will meet this program requirement. A 2.75 or higher grade point average is required for graduation.

Program Requirements

General Education

50-51 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6-7 Credits

354-130 Elementary Statistics or	
354-530 Statistical Methods	2-3
355-120 Introductory College Mathematics I (or more advanced)	4

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

12 Credits

320-210 Principles of Economics I	3
375-210 Government or	
387-110 Introductory Sociology	3
479-110 General Psychology	3

F. Natural Sciences (with Lab)

9 Credits

308-134 Physiology and Anatomy for Health Sciences	4
311-125 Principles of Chemistry for Health Sciences or	
311-135 College Chemistry I	5

G. Technology

2 Credits

H. General Education Electives

2 Credits

Course must come from categories A, B, D, E or F.

Major Studies

68 credits required

Sciences

15 Credits

308-306 General Microbiology	4
308-362 Advanced Physiology	3
311-201 Organic Chemistry Lecture	3
311-203 Organic Chemistry Laboratory	1
311-511 Biochemistry	4

Nutrition

15 credits

229-212 Nutrition	3
229-380 Community Nutrition	3
229-407 Medical Terminology	2
229-410 Advanced Nutrition	3
229-618 Diet Therapy	4

Nutrition Education and Communication

8 credits

229-606 Nutrition Education	3
242-201 Presentation Strategies For Home Economics	2
326-515 Technical Writing or	
326-546 Research Reporting	3

Food and Food Science

10 credits

229-240 Food Science	4
229-638 Experimental Foods	3
229-661 Multicultural Aspects of Food and Nutrition Patterns	3

Food Service Administration/Management

17 credits

160-304 Principles of Management	3
229-308 Management of Food Production	3
245-311 Quantity Food Production	4
245-501 Food Service Administration	3
245-521 Food Service Equipment	2
354-140 Computer Concepts or	
354-141 Computer Programming – BASIC	2

Career Awareness

3 credits

229-101 Dietetics as a Profession	1
229-397 Field Experience	2

Electives

6 credits required

EARLY CHILDHOOD EDUCATION

Introduction

The curriculum in the Early Childhood Education program is designed to develop resourceful, creative and competent teachers to work with young children in educational settings. The program, which emphasizes theory and practice, meets the requirements for preschool through grade 3 teaching certification for the State of Wisconsin. Academic course work is enriched by involvement with children and families beginning in the freshman year, with observation/participation experiences in UW-Stout's Child and Family Study Center. Graduates are employed as preschool, kindergarten and primary teachers, and as administrators of child care centers, curriculum specialists, and resource and referral specialists within corporations and the public sector.

General Requirements

Bachelor of Science Degree

Total for graduation	128 credits
General Education	43 credits
Major Studies	85 credits

A minimum cumulative grade point average of 2.75 is required for graduation.

An overall grade point average of at least 2.75 is required for acceptance into advanced standing in professional teacher education. Students must make written application to the office of Teacher Education prior to the academic year in which the student desires to enroll in student teaching.

Students must have a minimum of a full semester, full day student teaching and student teaching at the prekindergarten, kindergarten and primary levels. A minimum of two eight-credit student teaching experiences and one four-credit student teaching experience is required. Proficiency in mathematics, reading and writing as demonstrated by achieving passing scores on the Preprofessional Skills Test is also required.

Students must demonstrate proficiency in American Red Cross First Aid procedures, either by verifying current certification with the program director, or by satisfactory completion of 466-340 ARC Standard First Aid and Personal Safety.

* Required courses with a grade point of 2.0 or better. Courses in which a student earns less than the required 2.0 must be retaken and at least a 2.0 earned prior to student teaching.

** Required major courses with grade point of 1.67 or better. Courses in which a student earns less than the required 1.67 must be retaken and at least a 1.67 earned prior to student teaching.

Program Requirements

General Education

43 credits required

A. Communication Skills

8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

355-118	Concepts of Mathematics (or more advanced)*	4
<i>Remaining course must be from areas of math, logic, statistics or computer science.</i>		

C. Health and Physical Education

2 Credits

229-202	Nutrition for Healthy Living	2
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D. Humanities and the Arts†

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

† *Either 338-210 Modern World must be taken under this category or 303-220 Cultural Anthropology must be taken under Category C.*

E. Social and Behavioral Sciences†

9 Credits

375-210	Government	3
479-110	General Psychology*	3
<i>Remaining course must be from one of the following areas: anthropology, economics, geography or sociology.</i>		

† *See previous note under Category D.*

F. Natural Sciences (with Lab)

4 Credits

308-150	Man and the Environment	2
<i>Remaining course must be from either chemistry or physics.</i>		

G. Technology

2 Credits

H. General Education Electives

3 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

88 credits required

Career Development

1 credit

212-100	Introduction to Early Childhood Programs*	1
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Professional Education

16 credits

421-303	Educational Psychology*	3
421-312	Introduction to Curriculum, Methods and Assessment*	2
421-326	Foundations of Education*	2
421-576	Field Experience – Cross Cultural Experience *	1
421-536	Multiculturalism: Issues and Perspectives*	2
421-580	Reading and Language Arts in Elementary Education*	3
431-630	Mainstreaming Students with Exceptional Educational Needs*	3

Early Childhood

52 credits

212-124	Child Development I*	4
212-160	Children's Health and Safety *	1
212-250	Individual and Family Relations*	3
212-264	Child Guidance*	3
212-274	Creative Activities for Young Children*	2
212-294	Teaching/Learning Strategies in Early Childhood**	4
212-344	Science, Mathematics and Social Studies – Early Childhood Education**	4
212-433	Language Arts/Reading – Early Childhood *	3
212-507	Parent Education/Involvement*	2
212-533	Language Arts in Early Childhood Education*	2
212-544	Primary Curriculum: Science, Mathematics and Social Studies*	4
212-545	Exceptional Needs and Programming – Early Childhood*	3
212-594	Infant-Toddler Programming*	2
212-638	Child Abuse and Neglect*	2
212-662	Early Childhood Education Program Models*	1
212-665	Administration – Early Childhood Education Programs*	3
229-136	Nutrition for Young Children*	1
326-300	Children's Literature	3
360-206	Music for the Young Child*	2
421-581	Precinical: Elementary Education – Language Arts Reading*	1
467-265	Physical Activities for Young Children *	2

Student Teaching

20 credits

212-480A	Student Teaching in Preschool Programs*	4
212-493	Student Teaching in Kindergarten*	8
212-494	Student Teaching: Primary*	8

Concentrations

The Early Childhood Education program provides a broad background in the profession. Students who wish to specialize may choose from the following concentrations:

Business and Administration

Select 10 credits from the following:

140-590	Product/Service Liability	2
160-200	Financial-Managerial Accounting-Industrial Technology	3
160-235	Small Business Management	3
160-318	Business Law I	3
160-355	Principles of Risk Management	3
229-404	Food Service for Children	3
229-604	Food Service Practicum for Child Care Centers	1
326-515	Technical Writing	3
479-570	Assertive Training Procedures	2
479-579	Public Relations	2

Education of Children with Special Learning Needs

Select 10 credits from the following:

Non-certification program

212-541	Home-Based Programs in Early Childhood Education	1
212-545	Exceptional Needs and Programming—Early Childhood	2
212-XXX	Practicum	1-3
413-647	Behavior Problems of Children	2
413-648	Learning Disabilities in Young Children	2
431-630	Mainstreaming Students with Exceptional Educational Needs	3

Vocational, Technical and Adult Education

6 credits

Certification for teaching child care at Vocational-Technical Institutions.

199-502	Principles of Vocational, Technical and Adult Education	2
199-640	Instructional Evaluation in Vocational Education	2
413-501	Introduction to Guidance	2

2000 hours of occupational experience also required.

Other current requirements are included in major studies courses.

Early Childhood Family Education

7 credits

212-350	Dynamics of Family Development	3
212-XXX	Early Childhood Family Education	1
242-651	Family Life Education Programs	2

Other current requirements are included in major studies courses.

Child Life Care

10 credits

Hospital education liaison.

212-235	Child Development Laboratory or	
212-297	Field Experience	1-2
212-351	Death and the Family	1
212-524	Child Development II	3
212-607	Parent Counseling	2
212-637	Seminar in Child Development	2
391-210	Interpersonal Speech Communication	2
391-236	Listening	2
479-251	Child Psychology	3
479-673	Psychology of Stress	2

Early Childhood Exceptional Education Needs

(Minimum credits set by UW-Eau Claire.)

Students interested in earning Early Childhood Exceptional Education Needs (808) certification can qualify for UW-Eau Claire endorsement by completing the required credits in consultation with the UW-Eau Claire program adviser.

Elementary Education Certification

(Minimum credits set by UW-Eau Claire.)

FAMILY AND CONSUMER EDUCATIONAL SERVICES

Introduction

The Bachelor of Science degree in Family and Consumer Educational Services (formerly *Home Economics Educational Services*) provides career options for a variety of educational settings. The K-12 Home Economics Education/Family Life Certification concentration prepares students to teach in elementary, middle, junior high and high school settings across the United States. The Consumer Affairs concentration prepares students as credit and financial advisers and for consumer relation careers in business and agency settings. The Family/Extension concentration prepares graduates as extension agents and 4-H youth agents or to teach family life education in community settings. Each concentration provides a senior level practicum/field experience in an educational, community or business setting.

General Requirements

Bachelor of Science Degree

Total for graduation	124-127 credits
General Education	45 credits
Major Studies	19 credits
Concentration	60-63 credits

Program Requirements

General Education

45 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

355-XXX Any Mathematics	4
Remaining courses must be from areas including math, logic, statistics and computer science.	

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

326-XXX Any Literature	3
338-210 Modern World	3
Remaining courses must be from the areas of art history, creative arts, music appreciation, performing arts and philosophy.	

E. Social and Behavioral Sciences

9 Credits

320-210 Principles of Economics I	3
375-210 Government	3
479-110 General Psychology	3

F. Natural Sciences (with Lab)

9 Credits

308-132 Physiology and Anatomy	4
311-115 General Chemistry or	
311-125 Principles of Chemistry for Health Sciences	5

G. Technology

2 Credits

Major Studies

19 credits required

212-250 Individual and Family Relationships	3
212-654 The Workplace and the Family	2
229-124 Foods	4
229-212 Nutrition	3
242-101 Experiential Learning in Home Economics Educational Services	1
242-201 Presentation Strategies for Home Economics	2
245-360 Consumer Economics	3
245-663 Consumer Law	1

Concentrations

60-63 credits required

K-12 Home Economics Education/Family Life Certification 63 Credits

2.75 overall GPA required

199-502 Principles of Vocational, Technical and Adult Education	2
212-124 Child Development I	4
212-235 Child Development Laboratory	1
212-350 Dynamics of Family Development	3
212-507 Parent Education/Involvement	2
214-140 Textiles	3
242-301 Home Economics Curriculum	3
242-341 Clinical Experience in Schools	1
242-448 Student Teaching – Home Economics Education/Family Life	16
242-460 Home Economics/Family Life Education	2
242-620 Vocational Programs in Home Economics	2
245-250 Family Housing	3
421-303 Educational Psychology	3
421-312 Introduction to Curriculum, Methods and Assessment	2
421-326 Foundations of Education	2
421-536 Multiculturalism: Issues and Perspectives	2
421-576 Field Experience – Cross Cultural Experience	1
421-582 Secondary Reading and Language Development	2
431-630 Mainstreaming Students With Exceptional Educational Needs	3

Select 3 credits from the following:

212-615 Family Stress, Coping and Adaptation	1
229-308 Management of Food Production	3
229-542 Advanced Foods	3
229-661 Multicultural Aspects of Food and Nutrition Patterns	3
245-676 Family Finance	2

Select 3 credits from the following:

214-109 Applied Design for Family Living	2
214-112 Fashion Forecasting	3
214-120 Introduction to Apparel, Textiles and Merchandising	2
214-166 Apparel Construction	3
214-227 Basic Merchandising	3
214-330 Home Furnishings Merchandising	2
214-400 Self-Presentation in Business	1
214-617 Social/Psychological Aspects of Clothing	3

Students pursuing the degree with a concentration in K-12 Home Economics Education/Family Life Certification must have an overall grade point average of 2.75 for graduation; demonstrate proficiency in mathematics, reading and writing; and achieve passing scores on the Preprofessional Skills Test.

Family/Extension Education**60 Credits****2.5 overall GPA required**

212-124	Child Development I	4
212-350	Dynamics of Family Development	3
212-355	Lifespan Human Development	3
242-301	Home Economics Curriculum	3
242-460	Home Economics/Family Life Evaluation	2
242-500	Externship – Home Economics Community Education	4-8
242-630	Concepts of Extension Education <i>or</i>	
242-651	Family Life Education Programs	2
421-303	Educational Psychology	3
421-536	Multiculturalism: Issues and Perspectives	2

Select 20 credits from the following:

212-264	Child Guidance	3
212-430	Human Development: Aging Person	2
212-507	Parent Education/Involvement	2
212-524	Child Development II	3
212-525	Divorced, Single Parent and Remarried Family	2
212-530	Adulthood and the Family	3
212-615	Family Stress, Coping and Adaptation	1
214-140	Textiles	3
214-166	Apparel Construction	3
214-617	Social/Psychological Aspects of Clothing	2
229-380	Community Nutrition	3
229-446	Food Preservation	1
229-542	Advanced Foods	3
229-606	Nutrition Education	3
245-250	Family Housing	3
245-676	Family Finance	2
2XX-XXX	Subject Matter Electives	5

Select 6-8 credits from the following:

150-600	Organizational Leadership	3
199-674	Adult Education	2
242-597	Field Experience	2
326-346	Informational Writing	3
391-204	Techniques of Group Leadership	2
391-554	Television Programming and Performance	3
479-579	Public Relations	2

Electives

4-8 credits required

Consumer Affairs**60 Credits****2.0 overall GPA required**

150-600	Organizational Leadership <i>or</i>	
479-582	Human Resource Management	3
160-206	Introduction to Financial Accounting	3
160-330	Principles of Marketing	3
212-355	Lifespan Human Development	3
245-565	Consumer Aspects of Life Insurance	1
245-566	Consumer Aspects of Health Insurance	1
245-660	Consumer Credit	1
245-662	Consumer Protection	1
245-676	Family Finance	2
245-XXX	Consumer Affairs Field Experience <i>or</i>	
245-X49	Cooperative Education/Internship	1-2
320-215	Principles of Economics II	3
320-325	Economic and Business Statistics	3
326-320	Business Writing <i>or</i>	
326-425	Copy Editing and Preparation <i>or</i>	
326-515	Technical Writing	2-3
326-346	Information Writing	3
365-375	Personal and Professional Ethics	3
391-508	Speech Skills for Business and Industry	2
479-577	Consumer Psychology	3
479-579	Public Relations	2

Select 8 credits from the following:

245-678	Financial Planning for Retirement	2
320-335	Personal Securities Investments	2
320-435	Money, Banking, Financial Markets	3
320-445	Public Finance	3

Select 6 credits from the following:

160-334	Salesmanship and Sales Management	3
160-370	Principles of Advertising	3
160-679	Marketing Research	3

Electives

4-5 credits required

FOOD SYSTEMS AND TECHNOLOGY

Introduction

The Food Systems and Technology program prepares graduates for careers in the nation's largest business—the food industry. The Food Systems and Management concentration prepares graduates to administer large quantity food production and service facilities everywhere, from cruise ships to hospitals, schools and prisons. Graduates may also manage catering operations or restaurants and delis. Entry-level positions for graduates of the Food Science concentration include assistant food scientist, quality assurance manager, food analyst, food/ingredient development team member, technical representative and government relations officer. The Food Merchandising and Distribution concentration prepares graduates for positions such as supermarket, convenience store or food discount club management; manufacturer sales; food broker; specialty food merchandising; and marketing specialist. The Food Communication concentration prepares graduates for a variety of careers including food styling, magazine or newspaper writing and editing, food and nutrition television reporter, food promotion specialist or food industry home economist.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	34 credits
Concentration	42 credits
Electives	6 credits

The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.

Work experience must be obtained through participation in the Field Experience program.

All transfer credits must have a grade point of 2.0 or better. A 2.25 or better grade point average is required for graduation. All major studies courses must have a 1.67 or better grade point average.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

355-120 Introductory College Mathematics I (or more advanced) **	4
Remaining courses must be from the areas including math, logic, statistics and computer science. (Students enrolled in the Food Science concentration may use courses marked **. See page 47.)	

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

By selecting 320-210 Principles of Economics I and 320-215 Principles of Economics II in this category, you will fulfill the requirements (along with other required courses in the degree program) for a Business Administration minor. However, in order for the minor to be awarded, you **must** apply for it.

F. Natural Sciences (with Lab)

4 Credits

Required courses from the major studies component will fulfill these requirements.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Required courses from the major studies component will fulfill these requirements.

Major Studies

34 credits

150-600 Organizational Leadership	3
160-330 Principles of Marketing	3
181-280 Packaging Fundamentals	2
229-111 Food Systems and Technology Futures	1
229-124 Foods or	
229-240 Food Science	4
229-202 Nutrition for Healthy Living or	
229-206 Nutrition in the Hospitality Industry or	
229-212 Nutrition	2-3
229-397 Field Experience or	
229-449 Cooperative Education/Internship	2
229-442 Basic Sensory Analysis	3
229-542 Advanced Foods	3
229-650 Food Processing	3

Select 6-7 credits from the following:

These credits will fulfill the requirements for general education category F. Natural Sciences, and category H. General Education Electives (above).

308-122 Introductory Biology or	
308-134 Physiology and Anatomy for Health Sciences or	
308-142 Botany or	
308-152 Zoology	3-4
308-306 General Microbiology	4
311-115 General Chemistry or	
311-125 Principles of Chemistry for Health Sciences or	
311-135 College Chemistry I	5

Select 2-3 credits from the following:

326-346 Informational Writing or	
326-515 Technical Writing or	
391-508 Speech Skills for Business and Industry	2-3

Concentrations**42 credits required****Food Systems Management****42 credits**

160-206	Introduction to Financial Accounting	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-304	Principles of Management	3
229-260	Menu Planning and Design	2
229-308	Management of Food Production	3
229-5XX	Lifespan Nutrition	3
229-620	Food Styling	3
245-311	Quantity Food Production	4
245-371	Food, Beverage and Labor Cost Controls	3
245-375	Computer Systems for Food Service	2
245-501	Food Service Administration	3
245-521	Food Service Equipment	2
XXX-XXX	Electives*	2

Select 6 credits from the following:

229-610	Food Policy Regulation and Law	3
229-614	Catering or	
245-614	Catering	3
229-661	Multicultural Aspects of Food and Nutrition Patterns	3

*308-206 Food Service Environmental Sanitation (1 credit) may give students sanitation certification from the Educational Foundation of the National Restaurant Association.

Food Science**42 Credits**

150-200	Production/Operations Management	3
150-520	Quality Assurance	3
229-610	Food Policy Regulation and Law	3
229-638	Experimental Foods	3
229-XXX	Food Engineering	3
308-506	Food Microbiology	3
311-201	Organic Chemistry Lecture	3
311-203	Organic Chemistry Laboratory	1
311-511	Biochemistry	4
311-515	Food Chemistry	3
311-535	Instrumental Methods of Analysis	3
354-530	Statistical Methods**	3
355-152	Calculus for Management and the Social Sciences** or	
355-153	Calculus I**	4
372-211	Introduction to Physics	3

Select 3 credits from the following:

150-XXX	Any Industrial Management	3
160-XXX	Any Business Administration	3
181-XXX	Any Manufacturing	3
229-XXX	Any Food and Nutrition	3
245-XXX	Any Hospitality and Tourism	3
308-XXX	Any Biology	3
311-XXX	Any Chemistry	3
354-XXX	Any Applied Mathematics	3

** May be used to fulfill Category B Analytic Reasoning requirements (page 39).

Food Merchandising and Distribution**42 Credits**

160-206	Introduction to Financial Accounting	3
160-334	Salesmanship and Sales Management or	
214-229	Visual Merchandising	3
160-370	Principles of Advertising or	
214-625	Mass Merchandising	2-3
160-438	Industrial Distribution	3
229-225	Special Topics in Food and Nutrition or	
229-525	Special Topics in Food and Nutrition	1-2
229-302	Food and Beverage Distribution Industry	3
229-4XX	Food Distribution Operations and Control	3
229-610	Food Policy Regulation and Law	3
229-620	Food Styling	3
245-311	Quantity Food Production	4
245-501	Food Service Administration	3
245-521	Food Service Equipment	2
479-577	Consumer Psychology	3
XXX-XXX	Electives	2

Select 3 credits from the following:

160-535	Entrepreneurship: Small Business Planning or	
214-631	Service Management Strategies or	
245-371	Food, Beverage and Labor Cost Controls or	
320-215	Principles of Economics II	3

Food Communication**42 Credits**

120-504	Elementary Photography	2
120-XXX	Food Photography	1
130-140	Graphic Arts	2
130-545	Publications Production	2
160-334	Salesmanship and Sales Management	3
160-370	Principles of Advertising	3
160-679	Marketing Research	3
229-525	Special Topics in Food and Nutrition:	
	Recipe Development and Cookbook Writing	1
229-5XX	Lifespan Nutrition	3
229-614	Catering or	
245-614	Catering	3
229-620	Food Styling	3
229-638	Experimental Foods	3
229-661	Multicultural Aspects of Food and Nutrition Patterns	3
229-XXX	Any Food and Nutrition or	
245-XXX	Any Hospitality and Tourism	2-3
326-XXX	Any Journalism	2-3

Advanced speech and advanced writing are required. Take one in the Major Studies component and one in the concentration.

326-346	Informational Writing or	
326-515	Technical Writing or	
391-508	Speech Skills for Business and Industry	2-3

Select 2-3 credits from the following:

120-XXX	Any Media Technology	2-3
130-XXX	Any Graphic Communications	2-3
160-XXX	Any Business Administration	2-3
304-XXX	Any Art	2-3
326-XXX	Any English	2-3
326-XXX	Any Journalism	2-3

Electives**6 credits required**

GENERAL BUSINESS ADMINISTRATION

Introduction

The Business Administration program at UW-Stout is unique in that it blends business with technology. It has a solid foundation of general liberal studies and covers the functional areas of marketing, manufacturing, finance, personnel, accounting and law. It also requires comprehensive courses in policies, management information systems, leadership, and the legal and ethical aspects of management. The unique aspect of requiring credits in a technical component allows a student to tap one or more of Stout's technology areas such as construction, packaging, electronics, robotics, foods, textiles, computers and the like to complement the business program.

Recent graduates have obtained positions in areas of sales, retailing, production control, manufacturing supervision, purchasing, cost accounting, personnel, restaurant management, automotive customer relations, banking and others.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Professional Preparation	8-9 credits
Major Studies	61 credits
Technical Component	10 credits
Electives	2-3 credits

A grade point average of at least 2.5 for the last 64 credits earned or a grade point average of 2.5 overall for UW-Stout credits earned in program is required.

Program Requirements

General Education

42 credits required

A. Communication Skills 8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning 6 Credits

354-XXX Any Statistics	2
355-123 Finite Mathematics with Applications (or more advanced)	4

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

320-210 Principles of Economics I	3
Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.	

F. Natural Sciences (with Lab) 4 Credits

G. Technology 2 Credits

H. General Education Electives 2 Credits

Courses must come from categories A, B, D, E and F.

Professional Preparation

8-9 credits

Problem Solving 3 credits

Select one course from the following:

183-205 Design for Industry	3
326-347 Critical Writing	3
365-250 Critical Thinking	3
365-301 Introduction to Logical Thinking	3

Business Writing 3 credits

326-320 Business Writing or	
326-414 Technical Writing	3

Information Technology 2-3 credits

Select one course from the following:

120-640 Telecommunication Systems and Teleconferencing	2
130-281 Data Communications	3
130-504 Communications and Information Systems	1-3
130-505 Office Automation Technology	3
130-507 Artificial Intelligence Applications in Business	2
130-509 Business Applications in Desktop Publishing	1-2
130-681 Telecommunications Systems Administration	3
160-310C Special Topics – Management Information Systems: Data Base	2
XXX-XXX Any computer-based information systems course from a specific technical emphasis area	1-3

Major Studies

61 credits

At least 50 percent of these credits must be taken at UW-Stout.

Business Core

28 credits

150-200	Production/Operations Management	3
160-100	Introduction to Business Administration	1
160-206	Introduction to Financial Accounting	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-304	Principles of Management	3
160-318	Business Law I	3
160-330	Principles of Marketing	3
160-333	Management Information Systems – Decision Support	3
160-340	Business Finance	3
320-215	Principles of Economics II	3

Professional Core

33 Credits

Select one course from each of the following areas:

150-XXX	Any Production Operations	3
160-XXX	Any Accounting	3
160-XXX	Any Marketing	3
160-XXX	Any Legal	3
160-XXX	Any Integrated Systems	3
160-XXX	Any Experiential Learning	2
XXX-XXX	Any Human Resources	3
XXX-XXX	Any International	3
XXX-XXX	Any Management	3
XXX-XXX	Any Practicum	3
XXX-XXX	Any Business Electives	4

Technical Component

10 credits

Select courses related to career areas such as foods, graphics and telecommunications, packaging, textiles, robotics, automotive, construction or others with approval of the program director.

Electives

2-3 credits

HOSPITALITY AND TOURISM MANAGEMENT

Introduction

Hospitality and Tourism Management is one of the largest and fastest growing industries in the United States. Each year, leisure time increases for thousands of Americans, and the demands on the hospitality industry are growing. Existing lodging and dining facilities are expanding and new businesses are developing to accommodate the increased demand for hospitality services.

UW-Stout's Hospitality and Tourism Management majors receive a variety of training. The program includes studies in general education to provide students a flexible background, enabling them to adapt to a wide variety of situations in today's rapidly changing society. The four-year curriculum is designed to prepare competent, creative and responsible managers. Graduates are employed in the hospitality food and beverage industry, hotels and tourism facilities.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	44-46 credits
Major Studies	79-84 credits
Elective	1 credit

The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.

No grades of "F" or "D" will be accepted. It is recommended that any "F" or "D" grade be repeated the following semester. In order for transfer courses to be accepted in the program, a grade requirement of 1.67 or better must be met.

Students must maintain a 2.5 grade point average within major studies. Students will have until second semester of sophomore year to attain a 2.5 average.

Program Requirements

General Education

44-46 credits required

A. Communication Skills 10-12 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
3XX-XXX	Any Foreign Language	2-4
391-100	Fundamentals of Speech	2

B. Analytic Reasoning 6 Credits

354-130	Elementary Statistics	2
355-123	Finite Mathematics With Applications (or more advanced)	4

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) 4 Credits

G. Technology 2 Credits

H. General Education Electives 2 Credits

Course(s) must come from categories A, B, D, E or F.

Major Studies

79-84 credits required

Understanding the Industry

2 credits

245-100 The Role of Management in the Hospitality Industry 2
Students are required to complete 320 hours of work experience in the hospitality industry. Students **must** have completed 90 credits and gain approval of the experience by the program director before beginning.

Operational Management

18 credits

160-318 Business Law I 3
182-130 Hospitality, Living and Institutional Facility Planning 2
229-206 Nutrition in the Hospitality Industry 2
245-222 Institutional Food Purchasing 2
245-344 Hospitality Marketing and Sales 3
245-600 Integrated Management Systems – Hospitality (*seniors only*) 2
245-625 Hospitality Industry Law and Liability 3
308-206 Food Service and Environmental Sanitation 1

Food and Beverage Production

11 credits

229-124 Foods 4
245-311 Quantity Food Production 4
245-312 Restaurant Operational Management 3

Lodging Operations

8 credits

245-201 Housekeeping Procedures 2
245-202 Front Office Operations 3
245-515 Lodging Administration 3

Tourism Analysis

5 credits

245-240 Introduction to Tourism and the Travel Industry 2
245-341 Tourism Goods and Services 3

Human Resource Management

8-9 credits

Take the following two courses in listed sequence

245-205 Hospitality Organization Management 3
198-560 Training Systems in Business and Industry 3

Select 2-3 credits from the following:

150-600 Organizational Leadership 3
150-630 Employee Involvement: Work Teams 2
214-527 Store Management 3
245-626 Hospitality Industry – Employee and Labor Relations 2
365-375 Personal and Professional Ethics 3
479-582 Human Resource Management 3

Professional Communication

4-5 credits

Select 3 credits from the following:

326-320 Business Writing 3
326-346 Informational Writing 3
326-347 Critical Writing 3

Select 1-2 credits from the following:

391-200 Persuasive Speaking 2
391-206 Discussion 2
391-236 Listening 2
391-508 Speech Skills for Business and Industry 2
391-514 Interviewing (*seniors only*) 1

Personal Development

3-6 credits

Select 1-3 credits from the following:

212-355 Lifespan Human Development 3
212-535 Seminar on Self-Growth 2
212-615 Family Stress, Coping and Adaptation 1
214-400 Self-Presentation in Business 1
245-676 Family Finance 2
479-535 Motivation and Emotion 3
479-570 Assertive Training Procedures 2
479-673 Psychology of Stress 2

Select 2-3 credits from the following:

212-250 Individual and Family Relations 3
212-654 The Workplace and the Family 2
212-685 Seminar–The Culturally Distinct Child and Family 2
421-507 Applied Human Relations 2
479-540 Psychology of Individual and Group Differences 3

Financial Management

12 credits

160-206 Introduction to Financial Accounting 3
245-370 Hotel and Restaurant Accounting 3
245-371 Food, Beverage and Labor Cost Controls 3
245-670 Hospitality–Financial Analysis/Budget/Forecasting 3

Application Skills

2 credits

Select 2 credits from the following:

245-375 Computer Systems for Food Service 2
245-381 Property Management Applications 2

Related Area

6 credits

Students must complete courses in Operational Management, Food and Beverage Production, and Lodging Operations areas prior to enrolling in the following groups of courses.

Select 6 credits in one group from the following:

Group 1: Tourism Planning

245-340 Development of Tourism Attractions 3
245-640 Sociocultural System of Tourism 3
245-645 Geography of Tourism 3

Group 2: Food Service Operations

229-260 Menu Planning and Design 2
229-308 Management of Food Production 3
229-550 Fast Food Operations *or* 3
245-550 Fast Food Operations 3
229-614 Catering *or* 3
245-614 Catering 3
229-661 Multicultural Aspects of Food and Nutrition Patterns 3
245-310 Introduction to Wines and Spirits 3
245-501 Food Service Administration 3
245-521 Food Service Equipment 2

Group 3: Lodging Administration

245-348 Hospitality Convention/Meeting Planning 2
245-644 Resort Planning and Operation 3
245-682 Hospitality and the Handicapped Traveler 1

Electives

1 credit required

HUMAN DEVELOPMENT AND FAMILY STUDIES

Introduction

The Human Development and Family Studies (*formerly Child Development and Family Life*) program is the study of human development and family life in which child, family and community are viewed as interrelated. A multi-disciplinary approach provides content and theory to enhance the understanding of people and to develop creative approaches to serving them. Graduates of the program locate positions in family life education, human services and agency-related employment settings, in addition to being prepared for advanced study.

The program integrates academic study with significant experiential learning with children, families and community groups. Students are involved in observation/participation, field experience, independent study and practicum throughout the program. Hospitals, human service agencies, community groups, adolescent group homes and homes for senior citizens provide opportunities for the synthesis of practical and theoretical knowledge.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	48 credits
Major Studies	54 credits
Concentration or minor	22 credits

Students must have a cumulative grade point average of 2.5 within the major studies for graduation.

* Required courses with a grade of 2.0 or better.

** Required to become a Certified Family Life Educator by the National Council on Family Relations.

Program Requirements

General Education

48 credits required

A. Communication Skills

8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I*	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II*	3
391-100	Fundamentals of Speech*	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

15 Credits

387-110	Introductory Sociology *	3
479-110	General Psychology*	3
<i>Remaining courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.</i>		

F. Natural Sciences (with Lab)

4 Credits

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

54 credits required

212-101	Introduction to Child Development and Family Life	1
212-124	Child Development I**	4
212-250	Individual and Family Relations**	3
212-264	Child Guidance**	3
212-350	Dynamics of Family Development**	3
212-354	Skill Training for Individual/Family Interventions**	3
212-430	Human Development: Aging Person**	2
212-524	Child Development II**	3
212-530	Adulthood and the Family**	3
212-590	Family Research and Methodology**	3
212-601	Child and Family Law**	3
212-605	Family Health Care: Issues and Dilemmas**	2
212-610	Family Impact Seminar**	3
212-638	Child Abuse and Neglect	2
212-654	The Workplace and the Family**	2
212-685	Seminar – The Culturally Distinct Child and Family**	2
212-686	Experience: The Culturally Distinct Child and Family	1
212-692	Professional Issues **	2
212-693	Practicum in Child Development and Family Life**	4
375-510	Public Policy Analysis	3
413-666	Alcoholism and Family System Intervention	2

Concentration or Minor

22 credits required

Students complete the following concentration or have the option of completing the degree with selectives chosen in consultation with the program director, selecting the Aging Family minor, page 74, or any other minor, pages 74 to 78.

Child Development and Family Services

22 credits

387-205	Introduction to Social Work*	3
387-420	Child and Family Agencies*	3
387-430	Social Casework Methods*	3

Select 13 credits from either of the following options:

Option 1: Child Development Services

212-160	Children's Health and Safety	1
212-265	Child Guidance Practicum	1
212-274	Creative Activities for Young Children	2
212-351	Death and the Family	1
212-507	Parent Education/Involvement	2
212-525	Divorced, Single Parent and Remarried Family	2
212-531	Hospice Clinical Experience	2
212-535	Seminar on Self-Growth	2
212-545	Exceptional Needs and Programming – Early Childhood	2
212-594	Infant-Toddler Programming	2
212-595	Special Topics in Human Development: Intergenerational Lab	2
212-615	Family Stress, Coping and Adaptation	1
212-666	Family Planning	1
212-690	Death Education and Counseling in Families	2
229-136	Nutrition for Young Children	1
242-651	Family Life Education Programs	2
245-275	Management of Family Resources	3
326-300	Children's Literature	3
360-206	Music for the Young Child	2
387-560	Sociology of Juvenile Delinquency	3
431-516	Psychology of the Exceptional Child	3
459-505	Sign Language I	3
467-265	Physical Activities for Young Children	2
479-484	Introduction to Behavior Modification	2
479-552	Adolescent Psychology	3
479-561	Abnormal Psychology	3

Option 2: Family Services

212-251	Early Years of Marriage	1
212-351	Death and the Family	1
212-507	Parent Education/Involvement	2
212-525	Divorced, Single Parent and Remarried Family	2
212-531	Hospice Clinical Experience	2
212-535	Seminar on Self-growth	2
212-553	Dual Career Families	1
212-595	Special Topics in Human Development: Intergenerational Lab	2
212-615	Family Stress, Coping and Adaptation	1
212-626	Special Topics: Violence in the Family	1
212-650	Introduction to Marriage and Family Therapy	3
212-651	Marriage and Family Therapy Seminar	3
212-653	Relationship Communication Training	2
212-666	Family Planning	1
212-690	Death Education and Counseling in Families	2
229-136	Nutrition for Young Children	1
242-651	Family Life Education Programs**	2
245-275	Management of Family Resources	3
245-676	Family Finance	2
387-275	Sociology of Sex Roles	3
387-515	Criminology	3
387-560	Sociology of Juvenile Delinquency	3
459-505	Sign Language I	3
479-484	Introduction to Behavior Modification	2
479-552	Adolescent Psychology	3
479-561	Abnormal Psychology	3

INDUSTRIAL TECHNOLOGY

Introduction

UW-Stout's Industrial Technology degree is a broadly based program designed to prepare individuals for a variety of responsible industrial positions. Graduates have gained recognition and success in many areas of industry. Typical assignments include production planning and control, quality assurance, packaging, process engineering, methods engineering, systems analysis, cost estimating, purchasing, product design, sales and service, industrial relations, tools design, prototype development, technical communications, facilities management, and network administration.

The program provides for learning experiences to develop competencies in each of four broad areas: knowledge of the characteristics of materials and manufacturing processes; understanding of management principles and their application to industrial problems; awareness of the sociological implications and those psychological principles which are important in working with, communicating with, motivating, and supervising people; and skill in utilizing the mathematical and physical sciences to understand and solve technological and economic problems found in industry.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	51-55 credits
Major Studies	37-39 credits
Concentrations	36 credits

Program Requirements

General Education

51-55 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6-8 Credits

354-130 Elementary Statistics or	
354-530 Statistical Methods	2-3
355-153 Calculus I or	
355-156 Calculus and Analytic Geometry I	4-5

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

320-201 General Economics or	
320-210 Principles of Economics I	3
Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.	

F. Natural Sciences (with Lab)

13-15 Credits

Select 5 credits from the following:

311-115 General Chemistry or	
311-125 Principles of Chemistry for Health Sciences or	
311-135 College Chemistry I	5

Select one group from the following:

Group 1

372-231 General Physics I	4
372-232 General Physics II	4

Group 2

372-241 College Physics I	5
372-242 College Physics II	5

Group 3

372-281 University Physics I	5
372-282 University Physics II	5

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

37-39 credits required

Professional Studies

25-26 credits

140-581 Occupational Safety/Loss Control	3
150-200 Production/Operations Management	3
150-500 Engineering Economy	3
150-525 Quality Management	3
150-600 Organizational Leadership	3
160-200 Financial-Managerial Accounting – Industrial Technology or	
160-206 Introduction to Financial Accounting	3
326-515 Technical Writing or	
326-546 Research Reporting	3
391-XXX Any Advanced Speech	2

Select 2-3 credits from the following:

160-330 Principles of Marketing	3
320-420 Labor Economics	3
320-421 Collective Bargaining and Labor Relations	2

Basic Technology

12-13 credits

120-180 Microcomputer Applications – Words/Data or	
XXX-XXX Any Approved Applications Course	2
180-102 Manufacturing Materials and Processes I	3
183-110 Drafting or	
183-234 Computer Assisted Design and Drafting	2
184-204 Electricity/Electronics Fundamentals	3

Select 2-3 credits from the following:

130-140 Graphic Arts	2
181-103 Manufacturing Materials and Processes II	3
181-280 Packaging Fundamentals	2
185-103 Power Mechanics	2

Concentrations

Students may elect one of the following concentrations or complete the degree with electives chosen in consultation with the program director.

General 36 credits

Select 8 credits from the following:

120-504	Elementary Photography	2
130-140	Graphic Arts	2
181-280	Packaging Fundamentals	2
182-170	Light Construction Methods	2
185-103	Power Mechanics	2
185-260	Introduction to Fluid Power	2

These credits cannot be used to fulfill the General Education Technology requirements – Category G.

Select from Groups I through VI as follows:

Group I Select 2-3 credits from the following:

150-530	Material Handling	3
150-550	Plant Layout	3
182-175	Construction Materials	2
182-237	Architectural Technology	3
182-270	Heavy Construction Methods and Equipment	3

Group II Select 6 credits from the following:

150-220	Quality Systems - Service Industries	3
150-505	Product and Inventory Control	3
150-510	Production Processing	3
150-520	Quality Assurance	3
150-540	Time and Motion Study	3
181-103	Manufacturing Materials and Processes II	3
181-504	Computer Aided Manufacturing	3

Group III Select 2-3 credits from the following:

130-246	Typography	2
130-251	Composition	3
130-366	Image Transfer	3
181-315	Packaging Materials	3
181-380	Consumer Packaging Systems or	
181-385	Packaging Machinery	3

Group IV Select 3 credits from the following:

130-103	Communication and Information Technology	3
130-504	Communications and Information Systems	3
183-311	Technical Drafting	3
184-551	Introduction to Microprocessors	3
184-552	Electronic Communications	3
184-553	Instrumentation and Control	3
184-554	Electronics/Robotics	3

Group V Select 6 credits from the following:

150-514	Industrial Enterprise Practicum	3
160-334	Salesmanship and Sales Management	3
160-337	Purchasing	3
160-370	Principles of Advertising	3
160-410	Manufacturing Cost Analysis	3

Group VI Select 6 credits from the following:

183-205	Design for Industry or	
183-290	Mechanics of Solids I or	
183-291	Mechanics of Solids II	3
372-325	Strength of Materials	3
372-531	Statics	3

Select 1-3 credits in consultation with program director to bring degree total to at least 124.

Electronics 36 credits

184-270	Circuit Analysis	4
184-371	Solid State Electronics	3
184-381	Linear Electronic Circuits	3
184-473	Digital Logic and Switching	3
184-595	Seminar	2
355-154	Calculus II or	
355-157	Calculus and Analytic Geometry II	4-5

Select 16-17 credits from the following:

182-553	Environmental Systems – Plumbing and Electrical	3
184-280	Networks	4
184-348	Motors and Generators	2
184-376	Electronics Fabrication Laboratory	2
184-474	Digital Electronics	3
184-482	Electronic Communication Fundamentals	3
184-489	Business and Industrial Internship	1-4
184-530	Artificial Intelligence Applications	3
184-551	Introduction to Microprocessors	3
184-552	Electronic Communications	3
184-553	Instrumentation and Control	3
184-554	Electronics/Robotics	3
184-555	Electronic System Applications	3
184-574	Microprocessor Fundamentals	3
184-575	Microprocessor Interfacing	3
184-583	Fundamentals of Control	3
184-586	Instrumentation	3
184-X49	Cooperative Education Experience	2-6
184-X98	Field Experience	1-2
184-X99	Independent Study	1-3
XXX-XXX	Electives	5

Graphic Arts Management**36 credits**

130-246	Typography	2
130-251	Composition	3
130-355	Line and Halftone Photography	2
130-366	Image Transfer	3
130-370	General Binding	2
130-475	Printing Economics	3
130-543	Graphic Arts Production Techniques	2
130-557	Color Separation	2
130-595	Seminar	2
130-X49	Cooperative Education Experience or	
130-X98	Field Experience	2

Select 13 credits from the following:

120-605	Advanced Photography	2
120-645	Color Photography	2
130-263	Flexography and Gravure	2
130-359	Image Assembly and Platemaking	2
130-543	Graphic Arts Production Techniques	2-4
130-545	Publications Production	2
130-561	Screen Printing	2
130-X49	Cooperative Education Experience	7
130-X99	Independent Study	2-8
150-520	Quality Assurance	3
160-304	Principles of Management	3
160-370	Principles of Advertising	3
181-280	Packaging Fundamentals	2
181-315	Packaging Materials	3
181-380	Consumer Packaging Systems	3
181-480	Packaging Design and Evaluation	3
181-580	Packaging Development	3
181-585	Packaging Seminar	2
304-310	Graphic Design I	3
311-541	Chemistry of Materials	4
372-252	Laser Light and Waves	1
XXX-XXX	Other courses approved by program director	1-5

Industrial Distribution**36 credits**

150-505	Product and Inventory Control	3
160-310	Special Topics - Management Information Systems	2
160-334	Salesmanship and Sales Management	3
160-337	Purchasing	3
160-436	Marketing Management	3
160-438	Industrial Distribution	3
160-638	Industrial Distribution Seminar	2

*Select 16 credits from one of the following emphasis areas:***Distribution Emphasis**

130-505	Office Automation Technology	3
130-507	Artificial Intelligence Applications in Business	2
140-589	Fleet Safety Management	2
150-220	Quality Systems - Service Industries	3
150-530	Material Handling	3
150-605	Production and Inventory Control Practicum	2
150-318	Business Law I	3
160-X49	Cooperative Education Experience or	
160-X89	Business and Industrial Internship or	
160-X97	Field Experience	1-4
181-105	Basic Robotic and Automated Systems Application	3
181-280	Packaging Fundamentals	2
181-381	Distribution Packaging	3
186-501	Transportation	2

Technical Sales Emphasis

160-318	Business Law I	3
160-370	Principles of Advertising	3
160-679	Marketing Research	3
160-X49	Cooperative Education Experience or	
160-X97	Field Experience	1-4
391-236	Listening	2
391-508	Speech Skills for Business and Industry	2
479-579	Public Relations	2

Mechanical Power Transmission Emphasis

160-X49	Cooperative Education Experience or	
160-X89	Business and Industrial Internship or	
160-X97	Field Experience	1-4
184-348	Motors and Generators	2
184-551	Introduction to Microprocessors	3
185-260	Introduction to Fluid Power	2
185-303	Mechanical Power Transmission	3
185-361	Industrial Hydraulics	2
185-362	Industrial Pneumatics	2
185-603	Problems in Power Transmission	3

Manufacturing Management 38 credits

150-499	Independent Study	2
150-505	Product and Inventory Control	3
150-510	Production Processing	3
150-520	Quality Assurance	3
150-540	Time and Motion Study	3
160-410	Manufacturing Cost Analysis	3
181-103	Manufacturing Materials and Processes II	3

Select 16 credits from the following:

150-X49	Cooperative Education Experience	2-6
183-290	Mechanics of Solids I	3
183-291	Mechanics of Solids II or	
372-325	Strength of Materials	3
183-592	Mechanics of Machinery I	3
183-593	Mechanics of Machinery II	3
311-541	Chemistry of Materials	4
372-222	Heat and Thermodynamics	2
372-531	Statics	3

Select 1-5 additional professional/technical credits.

Packaging 40 credits

181-315	Packaging Materials	3
181-380	Consumer Packaging Systems	3
181-381	Distribution Packaging	3
181-385	Packaging Machinery	3
181-480	Packaging Design and Evaluation	3
181-580	Packaging Development	3
181-585	Packaging Seminar	2
183-205	Design For Industry or	
304-101	Fundamentals of Design	3
308-306	General Microbiology or	
311-541	Chemistry of Materials or	
372-325	Strength of Materials	3-4

Select 9-10 credits from the following:

150-520	Quality Assurance	3
150-530	Material Handling	3
160-304	Principles of Management	3
181-X49	Cooperative Education Experience	3
229-650	Food Processing	3
XXX-XXX	Other courses approved by program director	5

Facilities Management 36 credits

150-450	Maintenance Management	2
150-550	Plant Layout	3
150-489	Business and Industrial Internship or	
150-X49	Cooperative Education Experience or	
150-X98	Field Experience	2
150-499	Independent Study	2
182-237	Architectural Technology	3
183-290	Mechanics of Solids I or	
372-325	Strength of Materials	3
182-552	Environmental Systems - HVAC	3
185-303	Mechanical Power Transmission	3
186-506	Energy Management	2
311-553	Environmental Chemistry	3

Select 10 credits from the following:

150-530	Material Handling	3
150-540	Time and Motion Study	3
182-357	Site Engineering	2
182-538	Contract Requirements and Specifications	3
182-553	Environmental Systems - Plumbing and Electrical	3
182-558	Structural Systems - Wood and Steel	3
182-559	Structural Systems - Concrete and Masonry	3
182-570	Construction Estimating I	3
182-572	Management of Construction	3
183-212	Descriptive Geometry	3
183-311	Technical Drafting	3
184-344	Electric Power and Distribution	2
184-348	Motors and Generators	2
185-303	Mechanical Power Transmission	3
185-361	Industrial Hydraulics	2
185-362	Industrial Pneumatics	2
372-222	Heat and Thermodynamics	2
XXX-XXX	Other courses approved by program director	5

Special 36 credits

Select 8 credits from the following:

130-140	Graphic Arts	2
150-520	Quality Assurance	3
160-410	Manufacturing Cost Analysis	3
181-103	Manufacturing Materials and Processes II	3
181-280	Packaging Fundamentals	2
182-170	Light Construction Methods	2
183-290	Mechanics of Solids I	3
185-260	Introduction to Fluid Power	2

Select 20 credits in approved concentration core.

Select 8 additional professional/technical credits.

Product Development**36 credits**

183-290	Mechanics of Solids I or	
372-531	Statics	3
183-291	Mechanics of Solids II or	
372-325	Strength of Materials	3
183-532	Mechanical Design	4
183-537	Mechanical Design Drafting	2
183-592	Mechanics of Machinery I	3
183-593	Mechanics of Machinery II	3
372-533	Dynamics	3
XXX-XXX	Senior Capstone	2

Select 2-3 credits from the following:

130-X98	Field Experience	2
183-212	Descriptive Geometry	3
183-414	Technical Illustration	3
183-433	Tool and Die Design	2
183-636	Computer Assisted Design Problems	2

Select 2-5 credits from the following:

150-510	Production Processing	3
181-504	Computer Aided Manufacturing	3
181-505	Robotics	2
181-515	Metallurgy	3
181-537	Numerical Control in Manufacturing	3
183-X49	Cooperative Education Experience	2
184-551	Introduction to Microprocessors	3
184-552	Electronic Communications	3
185-303	Mechanical Power Transmission	3
185-361	Industrial Hydraulics	2
311-136	College Chemistry II	5
311-541	Chemistry of Materials	4
XXX-XXX	Other courses approved by the program director	1-5

*Select 8-12 credits from the courses above not already taken.***Quality Technology****36 credits**

150-220	Quality Systems – Service Industries	3
150-499	Independent Study	2
150-520	Quality Assurance	3
150-525	Quality Management	3
150-620	Quality Assurance – Practicum	2
181-508	Industrial Metrology	3
311-541	Chemistry of Materials	4
372-325	Strength of Materials	3

Select 13 credits from the following:

140-584	Safety Engineering Standards	2
150-450	Maintenance Management	2
150-530	Material Handling	3
150-630	Employee Involvement: Work Teams	2
150-X49	Cooperative Education Experience	2-6
181-103	Manufacturing Materials and Processes II	3
181-280	Packaging Fundamentals	2
181-504	Computer Aided Manufacturing	3
181-505	Robotics	3
181-537	Numerical Control in Manufacturing	3
184-551	Introduction to Microprocessors	3
184-553	Instrumentation and Control	3
311-535	Instrumental Methods of Analysis	3
312-542	Industrial Hygiene	3
XXX-XXX	Other courses approved by the program director	1-5

Technical Communications**36 credits**

120-560	Audiovisual Communications	2
130-509	Business Applications in Desktop Publishing	2
183-414	Technical Illustration	3
198-560	Training Systems in Business and Industry	3
326-425	Copy Editing and Preparation	2
326-535	Writing Technical Manuals	3
391-208	Theory of Communication	3

Select 8 credits from the following:

120-180	Microcomputer Applications – Words/Data	2
120-561	Advanced Graphic Production	2
120-630	Audio/Film Production Fundamentals or	
391-544	Television Programming and Performance	3
120-645	Color Photography	2
130-504	Communications and Information Systems	1-3
130-505	Office Automation Technology	3
130-545	Publications Production	2
183-234	Computer Assisted Design and Drafting	2
183-636	Computer Assisted Design Problems	2
184-551	Introduction to Microprocessors	3
184-552	Electronic Communications	3
354-240	FORTTRAN Programming	3

*Select 10 additional professional/technical credits.***Telecommunication Systems****36 credits**

130-281	Data Communications	3
130-283	Protocols and Interfacing Laboratory	3
130-506	Introduction to Telephony	2
130-507	Artificial Intelligence Applications in Business	3
130-581	Advanced Voice and Data Systems	4
130-582	Network Systems Design	3
130-681	Telecommunications Systems Management	3
160-310	Special Topics – Manufacturing Information Systems	2
184-482	Electronic Communication Fundamentals	3

Select 2-3 credits from the following:

120-640	Telecommunication Systems and Teleconferencing	2
130-505	Office Automation Technology	3
184-551	Introduction to Microprocessors	3
354-145	Computer Science II	3

Select 8-9 credits from the following:

160-318	Business Law I	3
183-X49	Cooperative Education Experience	3
198-560	Training Systems in Business and Industry	3
354-341	Data Structures	3
XXX-XXX	Other courses approved by program director	1-5

Off-Campus Learning Experiences

Three types are available: Field Experience; Cooperative Education Experience; and Internship. Students are encouraged to plan early for this learning experience since competition for industry-related sites is keen and those with the best preparation are selected. For additional details, see page ••.

MANUFACTURING ENGINEERING

Introduction

UW-Stout's Bachelor of Science Degree program in Manufacturing Engineering is designed to prepare engineers as experts in the production process, from design through manufacturing. As a member of a production team, the manufacturing engineer works with other professionals in the design of products, particularly from the point of view of the efficiency of fabrication. They are responsible for selecting the right materials for various product applications and for determining the methods to be used in processing these materials into usable products. Through the use of computers, they design and control the automated systems capable of rapidly making the product in large numbers. They must make important management decisions regarding production planning, inventory, scheduling and quality.

Through the intensive hands-on laboratory environment which is at the heart of UW-Stout's teaching strategy, the program will address these required skills by placing strong emphasis on the application of theory to the solution of real world problems. It will prepare pragmatic engineers who have the ability to respond aggressively to the changing needs of the marketplace, to apply research and theory to the development of marketable products and efficient processes, and to design with an awareness of the realities of manufacturing and the needs of society. The curriculum will have balanced components in:

1. General Education
2. Product and Tool Design
3. Manufacturing Materials and Processes
4. Computer Control and Manufacturing Systems
5. Engineering Management

In order to extend the accessibility of the program, a pre-engineering agreement has been made with the School of Engineering at UW-Platteville. Under the terms of the agreement, students may enroll in the engineering program of either institution and transfer to the other after up to two years of study at the first. As a result, students involved in this program have the opportunity to major in one of five engineering programs: manufacturing engineering at UW-Stout, or electrical, mechanical, civil or industrial engineering at UW-Platteville.

The Bachelor of Science Degree program in Manufacturing Engineering will be initiated in Fall 1994. Requirements for the program have not been finalized. Contact the School of Industry and Technology for information and advisement.

Tentative Curriculum

This information is provided only so prospective students can gain some understanding of the scope and type of courses that will be required for the degree. Some courses listed probably will be modified.

Proposed Program Requirements

Bachelor of Science Degree

Total for graduation	137
General Education	45
Major Studies	92

General Education

45 credits required

A. Communication Skills 8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning 10 Credits

355-156 Calculus and Analytic Geometry I	5
355-157 Calculus and Analytic Geometry II	5

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from two or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

Courses must be from two or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) 5 Credits

372-281 University Physics I	5
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G. Technology 2 Credits

Major Studies**92 credits required**

150-200	Production/Operations Management	3
150-500	Engineering Economy	2
150-630	Employee Involvement: Work Teams	2
150-XXX	Applied Quality Engineering	3
181-102	Manufacturing Materials and Processes I	3
181-103	Manufacturing Materials and Processes II	3
181-504	Computer Aided Manufacturing	3
181-505	Robotics	2
181-510	Manufacturing Systems	3
181-537	Numerical Control in Manufacturing	3
181-540	Design and Simulation of Manufacturing Cells	3
183-205	Design for Industry	3
183-291	Mechanics of Solids II	3
183-XXX	Computer Aided Design	4
183-XXX	Production Tool Design	3
183-XXX	Statics and Dynamics	3
184-553	Instrumentation and Control	3
184-XXX	Circuits and Devices	4
186-XXX	Thermodynamics	3
311-135	College Chemistry I	5
311-541	Chemistry of Materials	4
326-515	Technical Writing	3
354-144	Computer Science I	3
354-330	Introduction to Probability and Statistics	4
355-255	Differential Equations	3
372-282	University Physics II	5

Select 9 credits from the following:

181-230	Metal Machining Technology	3
181-340	Plastics Processing	3
181-357	Metal Casting Processes	3
181-365	Production Welding Technology	3
181-515	Metallurgy	3

MARKETING EDUCATION

Introduction

The field of marketing requires training for owners, managers and employees engaged primarily in marketing goods and services. Marketing Education at UW-Stout provides the teachers to train the work force. Marketing Education is one area of career education supported by local, state and federal funds. Teachers graduating with this major are prepared to teach marketing education at the secondary and/or post-secondary levels. Many graduates enter marketing positions in business and industry.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	82 credits

Although it is not a requirement for graduation, students should be aware of the fact that they must acquire a minimum of 4,000 hours of occupational experience before they can be certified to teach marketing education in Wisconsin and Minnesota.

Students must fulfill the English adequacy and speech proficiency requirements. Students must pass the Preprofessional Skills Test to receive teacher certification.

If a student takes 320-215 Principles of Economics II as an elective, they meet the requirements for a Business Administration minor.

Participation in Collegiate DECA is required.

Note: Students are required to maintain a 2.75 grade point average throughout the marketing education program.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

355-XXX Any Mathematics	4
Remaining courses must be from areas including math, logic, statistics and computer science.	

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

326-XXX Any Literature	3
338-210 Modern World	3
XXX-XXX Any Creative/Performing Arts	1
Remaining courses must be from areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.	

E. Social and Behavioral Sciences

9 Credits

320-210 Principles of Economics I	3
375-210 Government	3
479-110 General Psychology	3

F. Natural Sciences (with Lab)

4 Credits

Choose a biology course, and either a chemistry or physics course.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

82 credits required

150-600 Organizational Leadership or	
479-582 Human Resource Management	3
160-206 Introduction to Financial Accounting	3
160-207 Introduction – Corporate and Managerial Accounting	3
160-304 Principles of Management	3
160-318 Business Law I	3
160-330 Principles of Marketing	3
160-334 Salesmanship and Sales Management	3
160-370 Principles of Advertising	3
160-679 Marketing Research	3
196-201 Introduction to Marketing Education	3
196-202 Supervision of Distributive Education Clubs	3
196-301 Marketing Education Methods	3
196-401 Marketing Education Curriculum	2
196-409 Marketing Education – Student Teaching	16
196-501 Marketing Education Project Method	3
196-555 Marketing Education Seminar	3
199-502 Principles of Vocational, Technical and Adult Education	2
199-560 Cooperative Occupational Education Programs	2
421-303 Educational Psychology	3
421-312 Introduction to Curriculum, Methods and Assessment	2
421-326 Foundations of Education	2
421-536 Multiculturalism: Issues and Perspectives	2
421-576 Field Experience – Cross Cultural Experience (or comparable experience)	1
421-582 Secondary Reading and Language Development	2
431-630 Mainstreaming Students With Exceptional Educational Needs	3

Select 3 credits from the following:

160-355 Principles of Risk Management	3
160-365 Principles of Real Estate	2
160-690 Administrative and Business Policies	3
320-325 Economic and Business Statistics	3
320-550 Managerial Economics	3
479-579 Public Relations	2

PSYCHOLOGY

Introduction

Psychology, as a program, is the systematic study of behavior, particularly the behavior of individuals—their actions, reactions and cognitions. It has as its overriding goal the preparation of students to contribute to the improved condition of man. Students acquire competencies that lead to employment wherever psychology is applied in educational institutions, public and private agencies, business and industry. Students entering the program should realize that they must obtain graduate level education or other advanced training before they will be accepted as professional psychologists.

Students are given the opportunity to develop a personal program plan centered around their individual needs and goals. With careful planning, students may include self-planned concentrations in their programs in such diverse areas as counseling foundations, biofeedback technology, human services, family issues, industrial psychology and many others. All students are expected to include a core of study in the fundamental principles of human behavior in their programs, and each is expected to develop literacy in the arts, humanities, natural sciences and social sciences. Each student is also expected to develop and demonstrate effective communication skills as a part of the program's requirements.

General Requirements

Bachelor of Arts Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	40 credits
Minor or second area of depth	13-22 credits
Additional Liberal Studies Requirement	14 credits
Electives	6 credits

Students must attain a minimum grade point average of 2.25 in required courses for the major and a minimum grade point average of 2.5 in other courses for the major.

Program Requirements

General Education

42 credits required

A. Communication Skills 8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning 6 Credits

354-130	Elementary Statistics (or more advanced)	2
355-120	Introductory College Mathematics I (or more advanced)	4

C. Health and Physical Education 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences 9 Credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) 4 Credits

G. Technology 2 Credits

H. General Education Electives 2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

40 credits required

Required Courses

17 credits

479-110	General Psychology	3
479-190	Psychological Research Methods	4
479-210	Introduction to Applied Psychology	3
479-390	Experimental Psychology	4
479-520	Psychology: Its History and Systems	3

Psychology Breadth Selectives

13 or more credits

Select at least one course from each of the following groups:

Group 1: Experimental

479-451	Children's Learning	3
479-530	Psychology of Learning	3
479-535	Motivation and Emotion	3
479-632	Perception	3

Group 2: Developmental Social

479-251	Child Psychology	3
479-270	Social Cognition and Behavior	3
479-552	Adolescent Psychology	3
479-XXX	Psychology of Adjustment	3

Group 3: Clinical

479-460	Personality and Mental Health	3
479-540	Psychology of Individual and Group Differences	3
479-561	Abnormal Psychology	3
479-690	Psychological Measurement	3

Group 4: Applied

413-405	Peer Counseling	3
459-509	Introduction to Biofeedback	3
479-281	Environmental Psychology	3
479-484	Introduction to Behavior Modification	2
479-571	Introduction to Health Psychology	3
479-581	Industrial Psychology	2

Group 5: Experiential

479-X49	Cooperative Education Experience in Psychology	1-8
479-X98	Psychology Field Experience	2
479-480	Individual Research Project I and	1
479-481	Individual Research Project II	1
479-X99	Independent Study**	2-3

**Must involve research and be approved by the program director as meeting the requirement of this category.

Psychology Selectives

Selectives to bring the total to 40 credits. Select from any combination of the following options:

1. Additional courses from the Psychology Breadth Selectives.
2. Additional 479-XXX courses.
3. Behavioral science related courses offered by other departments subject to the program director's approval.

Minor or Second Area of Depth

13-22 credits

Students are expected to take a minor, specialization or self-planned concentration. The self-planned concentration (22-credit minimum) allows students to select course work and learning experiences that relate to a particular area of interest, and must be planned with an adviser and approved by a committee of at least three persons designated by the Psychology Program Committee.

Additional Liberal Studies Requirements

14 credits

Select 5 credits from the following:

308-XXX	Any Biology	1-4
311-XXX	Any Chemistry	1-5
372-XXX	Any Physics	1-5

Select 3 credits from the following:

326-XXX	Any Writing	1-3
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Select 3 credits from the following:

304-XXX	Any Art	1-3
326-XXX	Any Literature	1-3
338-XXX	Any History	1-3
360-XXX	Any Music	1-3
365-XXX	Any Philosophy	1-3
391-XXX	Any Performing Arts	1-3

Select 3 credits from the following:

303-XXX	Any Anthropology	1-3
320-XXX	Any Economics	1-3
336-XXX	Any Geography	1-3
338-XXX	Any History	1-3
375-XXX	Any Political Science	1-3
387-XXX	Any Sociology	1-3

Electives

6 credits required

RETAIL MERCHANDISING AND MANAGEMENT

Introduction

Retail Merchandising and Management is a program designed to prepare resourceful, creative and competent leaders who understand the retail industry. Students take courses such as sales promotion, accounting, advertising, merchandising and distribution as well as communications, English, mathematics, social studies and the humanities. A minor in Business Administration is included in the requirements of the program. A highlight of the program is a field experience or co-op where the student works in retailing. Optional experiences and academic opportunities are also available including study abroad at the American Fashion College in London and a national study tour to fashion industries.

This program provides opportunities for careers such as group manager, store buyer, divisional merchandise manager, resident buyer, operations manager, personnel director, promotion-publicity manager and fashion director. Graduates with the interior decorating concentration may seek employment in retailing, interior studios, consulting or managing their own business.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	74-76 credits
Electives	6-12 credits

A minimum grade point average of 2.5 is required for graduation.

Definitions

UW-Stout offers two concentrations that are similar in name. "Interior Design" (B.F.A. in Art) and "Interior Decorating" (B.S. in Retail Merchandising and Management) are different, and offer students a choice of two professional areas.

Interior decorators furnish and accessorize existing or planned spaces using knowledge of color, fabrications, interior decoratives and furniture, fixtures and equipment to accommodate each client's individual taste.

The interior decorating concentration in this program provides graduates with business and decorating skills to enter the marketplace in retailing, interiors studios, or their own business, including consulting.

Interior designers produce functional and meaningful interior environments (*residential, commercial and public spaces*) by integrating human factors, art and design concepts, space planning, knowledge of architecture, building construction, codes, specifications, materials and furnishings.

The interior design concentration in the Art program, pages 36 to 38, prepares graduates to solve interior design problems, including the initial design and remodeling of structures, as part of an architectural design team or as a consultant.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition <i>or</i>	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing <i>or</i>	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2
<i>A minimum grade of "C" is required in each course. When courses in this category are transferred from other schools, grades as well as credits will apply.</i>	

B. Analytic Reasoning

6 Credits

355-XXX Any Mathematics	4
<i>Remaining courses must be from areas of math, logic, statistics and computer science.</i>	

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

320-210 Principles of Economics I	3
<i>Remaining courses must be from three or more areas including anthropology, geography, political science, psychology and sociology.</i>	

F. Natural Sciences (with Lab)

4 Credits

G. Technology

2 Credits

H. General Education Electives

2 Credits

Course(s) must come from categories A, B, D, E or F.

Major Studies

74-76 credits required

Students may choose either the Major Studies component listed here, or the Major Studies with Interior Decorating Concentration listed in the right column.

Students must earn a minimum grade of 2.0 in each 200 and 214 course, and must have a cumulative grade point average of 2.5 in the major studies component. When courses in this component are transferred from other schools, grades as well as credits will apply.

160-206	Introduction to Financial Accounting	3
160-304	Principles of Management	3
160-330	Principles of Marketing	3
200-325	Computer Applications in Home Economics	2
212-525	Divorced, Single-Parent and Remarried Families or	
212-654	The Workplace and the Family	2
214-112	Fashion Forecasting	3
214-120	Introduction to Apparel, Textiles and Merchandising	2
214-140	Textiles	3
214-202	Quality Analysis of Sewn Products	3
214-227	Basic Merchandising	3
214-229	Visual Merchandising	3
214-329	Fashion Merchandising Promotion	3
214-330	Home Furnishings Merchandising	2
214-339	Apparel Merchandising	1
214-398	Field Experience	2
214-430	Merchandise Planning and Control	4
214-435	Merchandising Systems	1
214-519	International Economic Trends in Textiles/Clothing	3
214-527	Store Management	3
214-534	Servicing the Needs of Minorities and Aging Populations	3
214-535	Special Topics in Fashion Merchandising	2-3
214-611	History of Fashion – 19th Century to Present	3
214-617	Social/Psychological Aspects of Clothing	3
214-625	Mass Merchandising	2
214-626	Fashion Retailing Practicum	4
214-631	Service Management Strategies (seniors only)	3
320-215	Principles of Economics II	3

Select 2-3 credits from the following:

198-560	Training Systems in Business and Industry	3
479-581	Industrial Psychology	2
479-582	Human Resource Management	3

Optional Experience and Academic Opportunities

By application only

214-449F	Retail Co-op Education/Internship	3-6
214-477	Study Abroad – American Fashion College	16
214-619	National Study Tour to the Fashion Industry	1

Minors

A minor in business administration is included in requirements of the program. An additional minor in speech or journalism is recommended for those with interest in these communication areas. Contact the program director for assistance in special areas of interest.

Electives

6-12 credits

Students who choose the Major Studies above will have 6-8 credits of electives. Students who choose the Major Studies with the Interior Decorating Concentration (right column) will have 11-12 credits of electives.

Major Studies with the Interior Decorating Concentration

70-71 credits required

160-206	Introduction to Financial Accounting	3
160-330	Principles of Marketing	3
183-234	Computer Assisted Design and Drafting	2
200-325	Computer Applications in Home Economics	2
214-109	Introduction to Interior Decorating	2
214-140	Textiles	3
214-227	Basic Merchandising	3
214-229	Visual Merchandising	3
214-330	Home Furnishings Merchandising	2
214-398	Field Experience	2
214-430	Merchandise Planning and Control	4
214-4XX	Interior Decorating Studio (seniors only)	2
214-527	Store Management	3
214-534	Servicing the Needs of Minorities and Aging Populations	3
214-535	Special Topics in Fashion Merchandising	2-3
214-545	Textiles for Interiors	2
214-695	Historic and Contemporary Fabrics	3
245-250	Family Housing	3
245-436	Commercial and Residential Lighting	2
304-101	Fundamentals of Design	3
304-202	Introduction to Art	3
304-204	Interior Design	3
304-304	Interior Design II	3
304-305	Presentation Techniques	3
304-532	Economics of House Furnishing	3
304-533	Period Furnishings	3

TECHNOLOGY EDUCATION

Introduction

Technology Education is a Bachelor of Science degree program consisting of 124 semester credits of general, professional and technical course work. The program leads to teaching certification in all 50 states. Although this program is designed to lead to an education degree, graduates find challenging career opportunities in business and industry as well. Students study fields such as communication, construction, manufacturing and transportation. They work with technologies such as computers, robots and lasers, and with more conventional equipment used in processing materials, energy and information. Students are required to complete at least 42 credits of general education in areas such as English, mathematics, science, speech and social studies. They are also required to complete 39 credits of professional education in areas of curriculum and instruction, human behavior and student teaching in a secondary school. Forty-three credits of technical work are also required. Of this, 35 credits are prescribed for all students in the majors and eight credits are electives to permit additional study in a selected area of communication, construction, manufacturing or transportation.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	82 credits

Students must have a cumulative grade point average of 2.75 or better to be admitted to advanced standing for teacher education. Graduation requires a 2.75 overall grade point average, excluding clinical and preclinical experiences. See pages 17-18 for additional information. Participation in a related organization is required.

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts*

9 Credits

326-XXX Any Literature	3
XXX-XXX Any Creative/Performing Arts	3
Remaining course must be from areas including art history, creative arts, history, literature, music appreciation, performing arts or philosophy. * Either 338-210 Modern World must be taken under this category or 303-220 Cultural Anthropology must be taken under Category E.	

E. Social and Behavioral Sciences *

9 Credits

375-210 Government	3
479-110 General Psychology	3
Remaining course must be from areas of anthropology, economics, geography, political science, psychology or sociology.	

* See previous note under Category D.

F. Natural Sciences (with Lab)

4 Credits

Choose a biology course, and either a chemistry or physics course.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

82 credits required

Technical

43 credits

130-103 Communication and Information Technology	3
130-504 Communications and Information Systems	3
150-514 Industrial Enterprise Practicum	3
181-102 Manufacturing Materials and Processes I	3
181-103 Manufacturing Materials and Processes II	3
182-170 Light Construction Methods	2
183-110 Drafting	2
183-205 Design for Industry	3
183-620 Research and Development	2
184-204 Electricity/Electronics Fundamentals	3
184-555 Electronic System Applications	3
186-501 Transportation	2
186-504 Energy Technology	3
XXX-XXX Technical Electives	8

Professional Education

39 credits

190-160 Introduction to Technology Education	2
190-205 Teaching Methods Technology/Vocational Education	2
190-405 Curriculum Technology/Vocational Education	2
190-406 Evaluation in Technology/Vocational Education	2
190-409 Student Teaching	16
421-303 Educational Psychology	3
421-312 Introduction to Curriculum, Methods and Assessment	2
421-326 Foundations of Education	2
421-536 Multiculturalism: Issues and Perspectives	2
421-576 Field Experience – Cross Cultural Experience	1
(or a comparable experience)	
421-582 Secondary Reading and Language Development	2
431-630 Mainstreaming Students With Exceptional Educational Needs	3

Vocational Certification

A student who wishes to become certifiable to teach an advanced level occupational skills course in Wisconsin must complete this degree program, a course in Principles of Vocational, Technical and Adult Education, and a course in Organization and Administration of Cooperative Education Programs. The student must also have a minimum of 2,000 hours of related work experience.

VOCATIONAL REHABILITATION

Introduction

The main objective of this program is to provide the field of rehabilitation with baccalaureate level personnel who have the competencies necessary to help persons with disabilities optimize their vocational potential. A general listing of these competencies includes:

1. Knowledge of the history, philosophy and development of the rehabilitation movement; knowledge of the rehabilitation process as it exists in various settings, including sheltered workshops, rehabilitation facilities, private rehabilitation, vocational rehabilitation agencies; knowledge of mental, physical and social disabilities plus the vocational limitations of these disabilities; knowledge of, and ability to utilize community resources to assist the handicapped; knowledge of, and ability to relate to allied professions: medicine, psychology, social work, physical therapy; and knowledge of, and ability to utilize occupational information and career planning methods.
2. Elementary skill in the use of vocational evaluation techniques; elementary skill in work adjustment and counseling techniques; and elementary skill in utilizing job placement and follow-up procedures for persons with disabilities.
3. Ability to interact effectively with persons with disabilities. This could include persons with physical, emotional and social disabilities such as mental illness, mental retardation, blindness, deafness, alcoholism, epilepsy, and those who have committed criminal offenses. The graduates of this program are employed in sheltered workshops, rehabilitation facilities, state vocational rehabilitation agencies, private rehabilitation, correctional centers, business and industry, adult day care centers, mental health clinics, halfway houses, and a variety of other settings serving persons with disabilities. Students who complete Special Education Certification are endorsed for Wisconsin licensure to teach students with cognitive disabilities, grades 6-12. Opportunities for advancement to supervisory and administrative positions are excellent. Graduate study in rehabilitation is available in more than 80 colleges and universities.

Students must select their concentration option by the end of the first semester of their junior year, including development and signed approval of an Individualized Concentration. Students who do not complete a concentration must submit a written plan showing development of a coherent selection of coursework consistent with the objectives of the degree. The plan must be submitted and approved by the program director by the end of the first semester of the junior year.

Articulation Agreement There is an approved articulation agreement for this program with the Associate of Applied Science degree in Alcohol and Other Drug Abuse from the Chippewa Valley Technical College.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	52-58 credits
Concentration, Minor or Specialization	22-28 credits
Electives	1-5 credits

Students who are taking the **Special Education Certification** concentration should turn to page 70 for program requirements. Students taking any of the other concentrations should refer to the program requirements that follow here.

Program Requirements for Vocational Rehabilitation

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

479-110 General Psychology	3
<i>Remaining courses must be from three or more areas including anthropology, economics, geography, political science and sociology.</i>	

F. Natural Sciences (with Lab)

4 Credits

308-134 Physiology and Anatomy for Health Sciences	4
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G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies**52-58 credits required**

A minimum grade of 2.0 is required in all rehabilitation studies. After earning 90 credits, students must maintain a 2.5 grade point average in rehabilitation studies to continue in the degree program.

308-220	Physiology of Disabilities	3
459-101	Introduction to Rehabilitation	3
459-102	Community Resources	3
459-205	Rehabilitation Practicum	4
459-230	Psycho-Social Aspects of Disabilities	3
459-310	Vocational Evaluation	4
459-401	Principles and Techniques of Caseload Management	2
459-410	Job Placement Processes	3
459-610	Psychological Testing – People with Exceptional Need	2
459-670	Work Adjustment Services	3
459-680	Principles of Rehabilitation Counseling	3
459-X98	Field Experience in Rehabilitation	2
<i>Select 7-9 credits from the following:</i>		
431-500	Introduction to Individuals With Cognitive Disabilities	3
459-325	Rehabilitation and Sensory Disability	3
459-520	Rehabilitation and Chemical Dependency	3
459-525	Rehabilitation of Public Offenders	3
459-555	Rehabilitation of the Older Disabled Worker	2
459-585	Rehabilitation and Mental Retardation	2
479-561	Abnormal Psychology	3
<i>Select 6-7 credits from the following:</i>		
459-602	Rehabilitation Program Operations	3
459-550	Independent Living	2
459-558	Rehabilitation Support System Networking	2
459-560	Technological Applications: Rehabilitation Services	2
459-601	Rehabilitation in the Private Sector	2
459-661	Forensics for the Rehabilitation Professional	2
<i>Select 4-7 credits from the following:</i>		
459-480	Advanced Rehabilitation Practicum	2
459-500	Special Topics in Rehabilitation	1
459-505	Sign Language I	3
459-506	Sign Language II	3
459-509	Introduction to Biofeedback	3
459-565	Laboratory in Rehabilitation Technology	2
459-587	Management of Employees With Disabilities	3
459-605	Microcomputer Applications in Rehabilitation	2
459-682	Sexuality and Disability	2
459-685	Group Processes in Rehabilitation Settings	2
459-X49	Rehabilitation Cooperative Education Experience	1-6

Concentrations**22-28 credits required****Business****22 credits****Required Concentration Courses (13 credits)**

160-206	Introduction to Financial Accounting	3
459-480	Advanced Rehabilitation Practicum	2
459-587	Management of Employees with Disabilities	3
459-601	Rehabilitation in the Private Sector	2
459-602	Rehabilitation Program Operations	3

Restricted Concentration Selectives (9 credits)

150-200	Production/Operations Management	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-235	Small Business Management	3
160-304	Principles of Management	3
160-318	Business Law I	3
160-330	Principles of Marketing	3
160-334	Salesmanship and Sales Management	3
160-340	Business Finance	3
160-355	Principles of Risk Management	3
160-690	Administration and Business Policies	3
479-582	Human Resource Management	3

Independent Living**22 credits****Required Concentration Courses (13 credits)**

413-405	Peer Counseling	3
459-480	Advanced Rehabilitation Practicum	2
459-550	Independent Living	2
459-558	Rehabilitation Support System Networking	2
459-682	Sexuality and Disability	2
479-570	Assertive Training Procedures	2

Restricted Concentration Selectives (9 credits)

140-580	Driver Education for the Handicapped	2-3
212-430	Human Development: Aging Person	2
212-554	The Single-Parent Family	1
212-660	Current Topics in Sexuality	1
229-212	Nutrition	3
229-505	Nutrition for the Aged	2
245-250	Family Housing	3
245-682	Hospitality and the Handicapped Traveler	1
387-205	Introduction to Social Work	3
387-215	Sociology of the Family	3
387-420	Child and Family Agencies	3
431-581	Legal Rights of Handicapped	2
459-685	Group Processes in Rehabilitation Settings	2
459-X99	Independent Study	1-3
479-484	Introduction to Behavior Modification	2
479-571	Introduction to Health Psychology	3

Individualized**22 credits****Required Concentration Courses – none.**

Retricted Concentration Selectives – 22 credit block chosen in conjunction with and approved by program director.

Physical Education**22 credits****Required Concentration Courses (10.5 credits)**

466-340	ARC Standard First Aid and Personal Safety	2
466-346	ARC Cardiopulmonary Resuscitation	5
466-355	Kinesiology	3
459-480	Advanced Rehabilitation Practicum	2
479-571	Introduction to Health Psychology	3

Restricted Concentration Selectives (11.5 credits)

466-101	Discovering Wellness	1
466-102	Personal Health	2
466-365	Physiology of Exercise	3
467-265	Physical Activities for Young Children	2
467-340	Camp Leadership	2
467-342	Water Safety Instructor	2
467-XXX	Any Physical Education (activity)	5

Note: No half-credit activity course may be counted both to fill physical education requirements in major and count as elective credit.

Rehabilitation Counseling**22 credits****Required Concentration Courses (16 credits)**

212-650	Introduction to Marriage and Family Therapy	3
413-405	Peer Counseling	3
459-480	Advanced Rehabilitation Practicum	2
459-520	Rehabilitation and Chemical Dependency	3
459-685	Group Processes in Rehabilitation Settings	2
479-460	Personality and Mental Health	3

Restricted Concentration Selectives (6 credits)

212-351	Death and the Family	1
212-354	Skill Training for Individual/Family Interventions	3
212-607	Parent Counseling	2
212-615	Family Stress, Coping and Adaptation	1
212-690	Death Education and Counseling in Families	2
387-420	Child and Family Agencies	3
413-444	Introduction to Group Processes	2
413-650	Behavior Problems of Adolescents	2
413-666	Alcoholism and Family Systems Intervention	2
413-694	Counseling Older Persons	2-3
431-581	Legal Rights of Handicapped	2
459-500A	Applied Biofeedback in Rehabilitation	1
459-509	Introduction to Biofeedback	3
459-510	Clinical Biofeedback Laboratory	3
459-525	Rehabilitation of Public Offenders	3
459-682	Sexuality and Disability	2
459-X99	Independent Study	1-3
479-484	Introduction to Behavior Modification	2
479-570	Assertive Training Procedures	2

Rehabilitation Technology**28 credits****Required Concentration Courses (17 credits)**

140-587	Human Factors Engineering	3
181-102	Manufacturing Materials and Processes I	3
181-103	Manufacturing Materials and Processes II	3
183-110	Drafting	2
183-205	Design for Industry	3
184-204	Electricity/Electronics Fundamentals	3
459-560	Technical Applications: Rehabilitation Services	2
459-565	Laboratory in Rehabilitation Technology	2

Continued next column

Restricted Concentration Selectives (11 credits)

140-581	Occupational Safety/Loss Control	2-3
140-583	Voluntary OSHA Compliance	2-3
150-540	Time and Motion Study	3
181-230	Metal Machining Technology	3
181-241	Machine Woodworking	2
181-250	Plastics I	2
183-311	Technical Drafting	3
185-260	Introduction to Fluid Power	2
185-361	Industrial Hydraulics	2
185-362	Industrial Pneumatics	2
300-101	Computer Literacy	2
304-100	Drawing I	3
304-300	Design Theory and Methods	3
304-330	Industrial Design I	3
459-X99	Independent Study	1-3
466-355	Kinesiology	3

Rehabilitation of the Older Person**22 credits****Required Concentration Courses (17 credits)**

212-413	Human Development: Aging Person	2
387-XXX	Sociology of Aging *	3
413-694	Counseling Older Persons	2-3
459-480	Advanced Rehabilitation Practicum	2
459-550	Independent Living	2
459-555	Rehabilitation for the Older Disabled Worker	2
459-558	Rehabilitation Support System Networking	2
459-560	Technological Applications: Rehabilitation Services	2

* Course under development.

Restricted Concentration Electives (5 credits)

212-585	Family Based Employee Assistance Programs	3
229-505	Nutrition for the Aged	2
387-215	Sociology of the Family	3
387-250	Social Psychology	3
431-581	Legal Rights of Handicapped	2
466-102	Personal Health	2
479-460	Personality and Mental Health	3
479-673	Psychology of Stress	2

Community-Based Rehabilitation**22 credits****Required Concentration Courses (18 credits)**

199-534	Task Analysis	2
431-581	Legal Rights of Handicapped	2
459-480	Advanced Rehabilitation Practicum	2
459-550	Independent Living	2
459-558	Rehabilitation Support System Networking	2
459-560	Technological Applications: Rehabilitation Services	2
459-688	Advanced Job Placement	2
459-XXX	Community Based Rehabilitation Applications*	2
459-XXX	Supported Employment*	1
459-XXX	Transitional Employment*	1

* Course under development.

Restricted Concentration Electives (4 credits)

160-115	Understanding Business	2
387-530	Sociology of the Community	3
459-587	Management of Employees with Disabilities	3
459-601	Rehabilitation in the Private Sector	2
479-484	Introduction to Behavior Modification	2
479-579	Public Relations	2

Electives**1-5 credits**

Program Requirements for the Special Education Certification Concentration

Leads to Wisconsin #806 Licensure.

General Education

42 credits required

A. Communication Skills

8 Credits

326-101	Freshman English – Composition or	
326-111	Freshman English – Honors I	3
326-102	Freshman English – Reading and Related Writing or	
326-112	Freshman English – Honors II	3
391-100	Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

355-XXX	Any Mathematics	4
Remaining course must be from areas of math, logic, statistics and computer science.		

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts*

9 Credits

326-XXX	Any Literature	3
XXX-XXX	Any Creative or Performing Arts	1-3
Remaining course(s) must be from the areas of art history, history, music appreciation, performing arts and philosophy. * Either 338-210 Modern World must be taken under this category, or 303-220 Cultural Anthropology must be taken under Category E.		

E. Social and Behavioral Sciences*

9 Credits

375-210	Government	3
479-110	General Psychology	3
Remaining courses must be from the following areas: anthropology, economics, geography and sociology. *See previous note under Category D.		

F. Natural Sciences (with Lab)

4 Credits

Choose a biology course, and either a chemistry or physics course.

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies – Special Education Certification

41 credits required

421-303	Educational Psychology	3
421-312	Introduction to Curriculum, Methods and Assessment	2
421-326	Foundations of Education	2
421-536	Multiculturalism: Issues and Perspectives	2
421-576	Field Experience – Cross Cultural Experience	1
421-582	Secondary Reading and Language Development	2
421-XXX	Preclinical	1
459-101	Introduction to Rehabilitation	3
459-102	Community Resources	3
459-230	Psycho-Social Aspects of Disabilities	3
459-310	Vocational Evaluation	4
459-401	Principles and Techniques of Caseload Management	2
459-410	Job Placement Processes	3
459-560	Technological Applications: Rehabilitation Services	2
459-610	Psychological Testing – People with Exceptional Need	2
459-680	Principles of Rehabilitation Counseling	3
479-552	Adolescent Psychology	3

One field experience must be with the cognitively disabled—borderline, and one with the cognitively disabled—severe. At least one Field Experience must be at the junior high or middle school level.

Concentration

40 credits required

431-481	Student Teaching Youth With Cognitive Disabilities	16
431-500	Introduction to Individuals With Cognitive Disabilities	3
431-518	Introduction to Teaching/Assessment in Special Education**	2
431-522	Curriculum and Instruction: Functional Living Skills	2
431-523	Curriculum and Instruction: Academic Skills	3
431-524	Curriculum and Instruction: Career and Transition Education	3
431-526	Practicum in Special Education	2
431-528	Assessment for Individual Educational /Transitional Plans	3
431-630	Mainstreaming Students With Exceptional Educational Needs	3
431-662	Classroom Management Techniques	3

At least 12 Special Education (431-XXX) credits plus Student Teaching must be completed at UW-Stout to be recommended for certification by UW-Stout. See pages 17 and 18 for specific requirements on admission to advanced standing, admission to student teaching, graduation and standardized teacher examinations.

** A grade of 3.0 or better is required in 431-518 Introduction to Teaching/Assessment in Special Education. A cumulative grade point average of 2.75 is required.

Electives

1 credit required

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

Introduction

This program prepares teachers for post-high school settings such as junior colleges, public and private technical colleges, and industrial training programs.

A student must obtain a minimum of 2,000 hours of appropriate work experience for provisional certification to teach vocational, technical and adult courses in Wisconsin technical colleges.

Students must make applications for admission to the education sequence. Candidates must hold a cumulative grade point average of at least 2.75.

Articulation Agreement. There is an approved articulation agreement for this program with all of the Wisconsin Technical Colleges. The articulation agreement covers all Associate of Applied Art and Associate of Applied Science programs.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	75 credits
Electives	7 credits

Program Requirements

General Education

42 credits required

A. Communication Skills

8 Credits

326-101 Freshman English – Composition or	
326-111 Freshman English – Honors I	3
326-102 Freshman English – Reading and Related Writing or	
326-112 Freshman English – Honors II	3
391-100 Fundamentals of Speech	2

B. Analytic Reasoning

6 Credits

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education

2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts

9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences

9 Credits

479-110 General Psychology	3
<i>Remaining courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.</i>	

F. Natural Sciences (with Lab)

4 Credits

G. Technology

2 Credits

H. General Education Electives

2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

75 credits required

Technical

40 credits

Because each student brings different qualifications as a result of prior training and experience, the student, with the assistance of the program director, will define all 40 technical credits in terms of student and job competency needs.

Professional Education

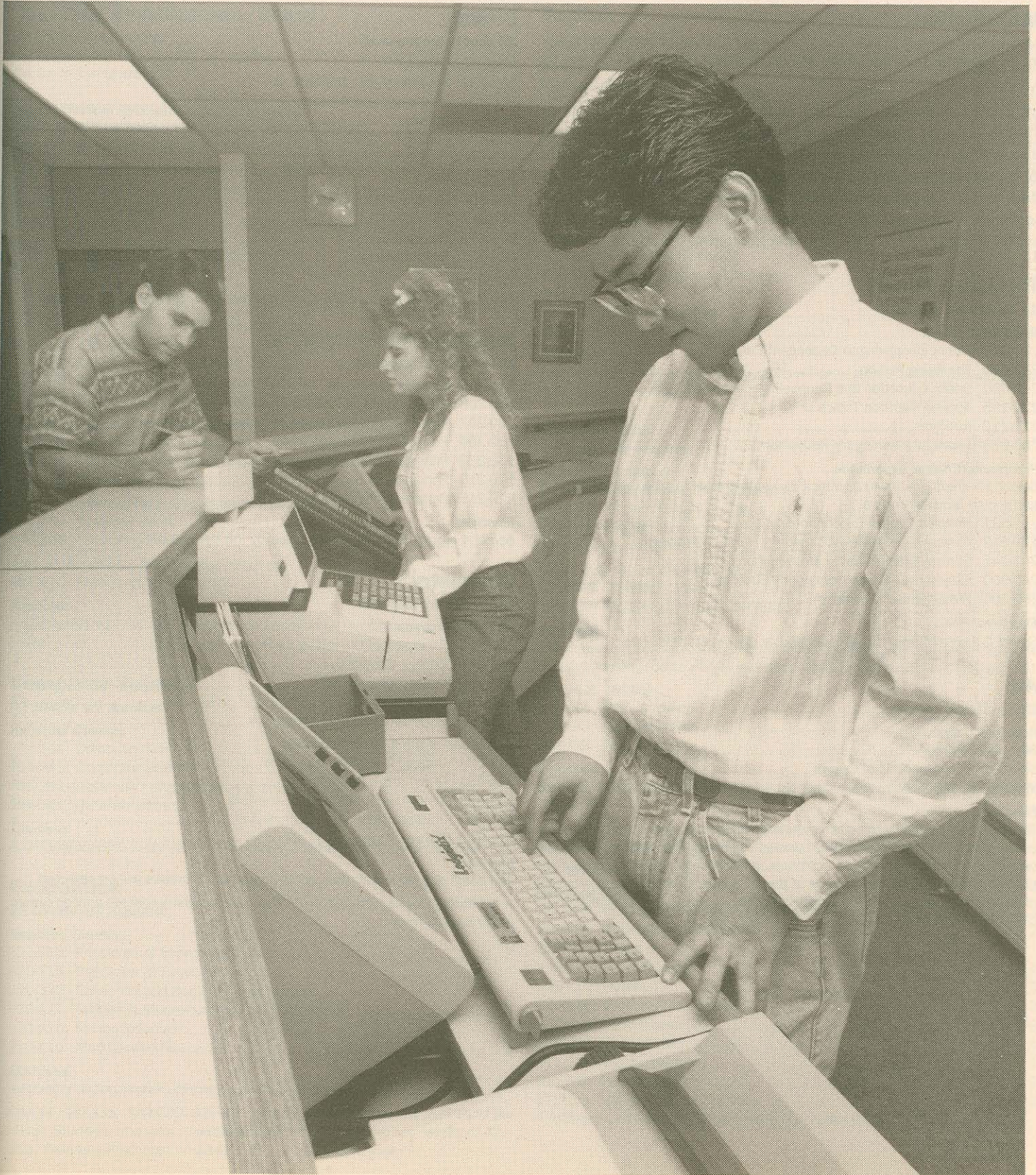
35 credits

120-560 Audiovisual Communications	2
150-600 Organizational Leadership or	
479-582 Human Resource Management	3
190-205 Teaching Methods – Technology/Vocational Education**	2
190-405 Curriculum Technology/Vocational Education**	2
190-406 Evaluation in Technology/Vocational Education**	2
190-408 Student Teaching – Technology/Vocational Education or	
198-589 Training Internship	8
198-560 Training Systems in Business and Industry	3
199-502 Principles of Vocational, Technical and Adult Education	2
199-534 Task Analysis	2
199-674 Adult Education	2
413-501 Introduction to Guidance**	2
421-303 Educational Psychology**	3
421-536 Multiculturalism: Issues and Perspectives**	2
<i>** Course content is mandated for Vocational, Technical and Adult Education certification.</i>	

Electives

7 credits required

Minors and Specializations



MINORS

Introduction

Minors are defined as either "studies in the discipline" or as "teaching." Teaching minors are those approved by the State Department of Public Instruction for certification. Requirements for the teaching minors include an education major, the methods course 421-305 Teaching Practicum in the minor, and some student teaching experience in the minor field, in addition to the required credits within the minor. The Approval Form for Minor Program must be submitted to the department offering the minor before starting the minor to assure an acceptable sequence of courses. Approval forms and minor program plans are available in the office of the department offering the minor.

The Aging Family

15 credits are required.

Required Courses

212-540	Family Caregiving to Dependent Elders	1
212-680	The Aging Person	2
212-690	Death Education and Counseling in Families	2
229-105	Applied Nutrition Topics or	
229-212	Nutrition	2-3
245-678	Financial Planning for Retirement	2

Practicum/Clinical Experience

Select 1-4 credit practicum or clinical experience from the following in addition to the nine required credits.

212-531	Hospice Clinical Experience	1-2
229-612	Clinical Experience—Community Nutrition Programs	4
242-241	Clinical Experiences in the Community	4
242-500	Externship—Home Community Education	4
459-205	Rehabilitation Practicum	4

Electives

Select 2-5 credits from the list supplied by the department.

Art

22 credits are required.

Required Courses

304-100	Drawing I	3
304-101	Fundamentals of Design	3
304-202	Introduction to Art	3

Electives

The additional 13 elective credits may be accumulated to overview or concentrate in one area. Students may select courses in drawing, painting, printmaking, ceramics, art history, art metals, sculpture, interior design, industrial design and graphic design to fulfill the balance of the Art minor. A minimum of six credits must be completed at UW-Stout to receive an Art minor. A minimum grade of "C" (2.0) is required in all courses.

Biology

22 credits are required

Required courses

308-132	Physiology and Anatomy or	
308-134	Physiology and Anatomy for Health Sciences	4
308-142	Botany	4
308-152	Zoology	4

Select one option from the following:

Option I:

308-306	General Microbiology	4
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Option II:

308-650	Neuroanatomy	2
308-651	Psychobiology	2

Electives

Additional departmental offerings to complete 22 credits will be selected.

Business Administration

22 credits are required.

Required Courses

160-206	Introduction to Financial Accounting	3
160-207	Introduction – Corporate and Managerial Accounting	3
160-304	Principles of Management	3
160-330	Principles of Marketing	3
320-210	Principles of Economics I	3
320-215	Principles of Economics II	3

Electives

Select 4 credits from the list supplied by the department.

Chemistry

22 credits are required.

Required Courses

311-125	Principles of Chemistry for Health Sciences or	
311-135	College Chemistry I	5
311-136	College Chemistry II	5
311-201	Organic Chemistry I Lecture	3
311-203	Organic Chemistry I Laboratory	1

Select one of the following courses:

311-204	Organic Chemistry II Lecture	3
311-531	Quantitative Analysis	3
311-535	Instrumental Methods of Analysis	3
311-501	Physical Chemistry I Lecture and	3
311-503	Physical Chemistry I Laboratory	1

Electives

Additional departmental offerings to complete 22 credits will be selected.

A minimum grade of "C" (2.0) is required in all chemistry courses applied toward the chemistry minor.

Coaching Certification/Minor

22 credits are required.

Eighteen credits are required for certification with at least one course in each of the six following areas.

Area I: Medical Emergencies (both required)

466-340	ARC Standard First Aid and Personal Safety	2
466-350	Prevention and Care of Athletic Injuries	2

Area II: Principles and Problems of Coaching

467-350	Principles of Physical Education and Athletics	2
467-360	Problems in Athletics	2
467-450	Organization and Administration of Physical Education	2

Area III: Theory and Knowledge of Coaching

467-401	Coaching Gymnastics	2
467-460	Coaching Basketball	2
467-461	Coaching Football	2
467-465	Coaching Competitive Swimming	2
467-470	Coaching Baseball	2
467-471	Coaching Track and Field	2
467-478	Coaching and Officiating Volleyball	2
467-479	Coaching Wrestling	2

Area IV: Kinesiological Foundations of Coaching (both required)

308-132	Physiology and Anatomy or	
308-134	Physiology and Anatomy for Health Sciences	4
466-355	Kinesiology	3

Area V: Physiological Foundations of Coaching

466-102	Personal Health	2
466-365	Physiology of Exercise	2

Area VI: Practicum in Coaching (required)

467-490	Practicum in Coaching	1-3
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Electives

Select additional courses from the list supplied by the department for the 22-credit minor.

Computer Science

22 credits are required.

Required Courses

354-144	Computer Science I	3
354-145	Computer Science II	3
354-241	Assembly Language Programming	3
354-341	Data Structures	3

Electives

Additional courses to complete 22 credits will be selected from the approved list.

Economics

22 credits are required.

Required Courses

320-210	Principles of Economics I	3
320-215	Principles of Economics II	3
320-325	Economic and Business Statistics or	
320-470	Economic Model-building and Forecasting	3
320-410	Microeconomics	3
320-415	Macroeconomics	3

Electives

Additional departmental offerings to complete 22 credits will be selected.

Course 320-335, 320-420, 320-421 and 320-440, may not be applied to the minor. Students who take a **teaching minor** must also take two credits of 421-305, Teaching Practicum, in addition to the 22-credit minor.

English

Teaching Minor

24 credits, plus two (2) credits in Education Methods, are required.

Required Courses

326-340	The Structure of English	3
326-347	Critical Writing	3
326-355	Recent World Literature	3
326-406	Shakespeare	3
326-407	Teaching English in the Secondary and Middle School	2
326-500	Literature for the Reading Child and Adolescent	3

Select 3 credits from each of the following:

Group A

326-348	American Literature	3
326-360	Modern American Literature	3

Group B

326-401	English Literature	3
326-350	Modern British Literature	3

Electives

Additional course to complete 24 credits will be selected, but not 326-101, 326-102, 326-111 or 326-112.

Discipline Minor

22 credits are required.

Option 1: Literature

Select one course from the following:

326-350	Modern British Literature	3
326-401	English Literature	3
326-406	Shakespeare	3

Select one course from the following:

326-348	American Literature	3
326-360	Modern American Literature	3

Electives

The remaining 16 credits may be selected from other literature offerings; one advanced writing course may be included; 326-347, Critical Writing, is suggested.

Option 2: Writing

XXX-XXX	Any Language	3
326-XXX	Any Literature	6
326-XXX	Any Writing	11

Electives

Select at least 2 additional credits from any of the Option 2 courses to complete 22 credits.

Food Technology

34 credits required.

Required Courses

150-200	Production/Operations Management	3
181-280	Packaging Fundamentals	2
229-124	Foods or	
229-240	Food Science	4
229-212	Nutrition	3
229-638	Experimental Foods	3
229-650	Food Processing	3
308-306	General Microbiology	4
311-511	Biochemistry	4
311-515	Food Chemistry	3
372-211	Introduction to Physics	3

Additional foods courses to complete 34 credits will be selected.

History

22 credits are required.

Required Courses

338-120	Early United States History	3
338-121	Modern United States History	3
338-140	Western Civilization	3
338-141	Western Civilization	3

Electives

Additional departmental offerings to complete 22 credits will be selected.

Students who take a **teaching minor** must include two of the following courses:

338-322	Afro-American History	3
338-360	Asian History	3
338-380	Latin American History	3

Electives

Two credits of 421-305 Teaching Practicum must also be taken, in addition to the 22-credit minor.

Journalism

22 credits are required.

Required Courses

120-504	Elementary Photography	2
130-140	Graphic Arts	2
326-306	Reporting and News Writing	3
326-310	Journalism Practicum	1
326-410	Writing and Selling Feature Articles	2
326-425	Copy Editing and Preparation	2

Writing Electives

Select 3 to 10 credits from the following:

326-320	Business Writing	3
326-345	Creative Writing	3
326-346	Informational Writing	3
326-347	Critical Writing	3
326-515	Technical Writing	3
326-525	Writing Technical Articles	3

Technical Specialty Electives

Select up to 7 credits from the following:

Projects Emphasis:

326-310	Journalism Practicum	1
326-537	Technical Writing Practicum	1-3

Public Relations Emphasis:

160-370	Principles of Advertising	3
479-579	Public Relations	2

Media Emphasis:

326-518	Mass Communication in American Society	3
391-244	Radio Programming and Production	3
391-554	Television Programming and Performance	3

Production Emphasis:

130-246	Typography	2
130-251	Composition	3
130-545	Publications Production	1

Mathematics

Teaching Certification

24 credits are required.

Twenty-two credits must be in the discipline and two credits in a teaching practicum.

Choose one option from the following:

Option 1:

354-330	Introduction to Probability and Statistics	4
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Option 2:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3

Option 3:

354-530	Statistical Methods	3
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Required Courses

354-X4X	Any formal programming language course	2-3
355-153	Calculus I or	
355-156	Calculus and Analytic Geometry I	4-5
355-154	Calculus II or	
355-157	Calculus and Analytic Geometry II	4-5
355-262	Modern Geometry	3
355-275	Linear Algebra	3
355-370	Modern Algebra I	3
421-305	Teaching Practicum	2

Electives

Additional courses to complete 24 credits will be selected with advisement.

Non-teaching Minor

22 credits required.

Required Courses

Select one group from the following:

Group I:

355-153	Calculus I	4
355-154	Calculus II	4

Group II:

355-156	Calculus and Analytic Geometry I	5
355-157	Calculus and Analytic Geometry II	5

Select 9 credits from the following:

354-331	Probability and Mathematical Statistics I	3
354-332	Probability and Mathematical Statistics II	3
354-446	Numerical Analysis I	3
354-447	Numerical Analysis II	3
355-158	Calculus and Analytic Geometry II	5
355-255	Differential Equations	3
355-262	Modern Geometry	3
355-275	Linear Algebra	3
355-350	Vector Analysis	3
355-370	Modern Algebra I	3
355-371	Real Analysis I	3
355-450	Real Analysis II	3
355-460	Complex Variables With Applications	3
355-XXX	Any approved mathematics elective	2-5

Select 6 credits from the following:

354-141	Computer Programming – BASIC	2
354-144	Computer Science I	3
354-145	Computer Science II	3
354-240	FORTTRAN Programming	3
354-530	Statistical Methods	3

The course 354-530 may not be included if either 354-331 or 354-332 is selected. **Both the teaching and non-teaching minors require a grade point of 2.0 or better in all courses applied to the minor.**

Physics

22 credits are required.

Required Courses

Select one group from the following:

Group I:

372-241	College Physics I	5
372-242	College Physics II	5
312-529	Atomic and Nuclear Physics	3

Group II:

372-281	University Physics I	5
372-282	University Physics II	5
372-529	Atomic and Nuclear Physics	3

Electives

At least 9 credits from departmental offerings with a 300 number or greater must be included in the minor program.

Property Management

28 credits are required.

Required Courses

150-450	Maintenance Management	2
160-206	Introduction to Financial Accounting	3
160-318	Business Law I	3
160-365	Principles of Real Estate	3
182-130	Hospitality, Living and Institutional Facility Planning	2
212-535	Seminar on Self-Growth or	
479-570	Assertive Training Procedures	2
245-200	Introduction to Property Management	2
245-381	Property Management Applications	2
245-684	Seminar in Property Management	2
245-X98	Any hospitality and tourism field experience	1-2

Electives

Additional courses approved by adviser to complete 28 credits will be selected.

Psychology

22 credits are required.

Required Courses

479-110	General Psychology	3
479-460	Personality and Mental Health or	
479-561	Abnormal Psychology	3

Select one course from the following:

354-130	Elementary Statistics or	
354-530	Statistical Methods	2-3
421-641	Education Evaluation	2
479-190	Psychological Methods I	3
479-251	Child Psychology or	
479-552	Adolescent Psychology	3
479-390	Experimental Psychology	3
479-690	Psychological Measurement	3

Electives

Select 11 or more credits from any of the courses above not already taken or from the list supplied by the department.

Sociology

22 credits are required.

Required Courses

303-220	Cultural Anthropology	3
387-110	Introductory Sociology	3

Electives

Additional courses to complete 22 credits will be selected from the list supplied by the department.

Speech

Teaching minor

22 credits are required.

Required Courses

391-101	Forensics	1
391-102	Forensics	1
391-200	Persuasive Speaking	2
391-202	Oral Interpretation	2
391-206	Discussion	2
391-208	Theory of Communication	3
391-210	Interpersonal Speech Communication	2
391-236	Listening	2
391-310	Introduction to Speech Correction	2
391-412	Teaching Speech in Middle and Secondary Schools	2

Electives

Additional courses to complete 22 credits will be selected.

A minimum grade point average of 2.75 with no grade lower than "C" is required.

At least six (6) credits of the minor must be from courses offered by the UW-Stout Speech department to fulfill the residency requirement.

Discipline Minor

The discipline minor consists of 22 credits with the following four options: General Speech, Communications and Public Address, Radio-Television, or Theater. Each option includes a minimum of 10 credits in that area plus 12 credits from the remaining three areas. A maximum of three credits may be selected from communication-related courses offered by other departments when approved by the minor adviser.

Technical Writing

22 credits are required.

Required Courses

326-301	Advanced Grammar	2
326-347	Critical Writing	3
326-425	Copy Editing and Preparation	2
326-515	Technical Writing	3

Select one course from the following:

326-535	Writing Technical Manuals	3
326-537	Technical Writing Practicum	1-3

Select one course from the following:

300-x49	Cooperative Education Program in Liberal Studies	2-8
326-320	Business Writing	3
326-346	Informational Writing	3
326-410	Writing and Selling Feature Articles	2
326-525	Writing Technical Articles	3
326-546	Research Reporting	3

Select 6 to 8 credits from the courses above or from the following:

Production

130-140	Graphic Arts	2
130-246	Typography	2
130-545	Publications Production	1

Visual

120-504	Elementary Photography	2
183-110	Drafting	2
183-414	Technical Illustration	1-3

Oral

391-236	Listening	2
391-508	Speech Skills for Business and Industry	2

Support

130-504	Communications and Information Systems	1-3
120-580	Microcomputer Applications - Words/Data	2
130-509	Business Applications in Desktop Publishing	1-2
326-XXX	Any Literature	3

Tourism

24 credits are required.

Required Courses

245-240	Introduction to Tourism and the Travel Industry	2
245-340	Development of Tourism Attractions	3
245-341	Tourism Goods and Services	3
245-640	Sociocultural System of Tourism	3
245-645	Geography of Tourism	3
245-682	Hospitality and the Handicapped Traveler	1

Select 4 credits from the following:

328-101	Elementary French I	4
328-102	Elementary French II	4
329-103	Elementary Spanish I	4
329-104	Elementary Spanish II	4

A comparable number of credits in a well-known language used in travel and trade may be substituted.

Electives

Five credits required.

Traffic Safety Education

22 credits are required.

Required Courses

140-271	Safety principles and Practices	3
140-374	Driver Education Laboratory Methods and Techniques	3
140-375	Driver and Traffic Safety	3
140-574	Alcohol, Drugs and Accident Prevention	2-3
140-575	Behavioral Approach to Accident Prevention	2-3

Select 7 credits from the following:

120-560	Audiovisual Communications	2
140-580	Driver Education for the Handicapped	2-3
140-581	Occupational Safety/Loss Control	2-3
190-205	Teaching Methods Technology/Vocational Education	2
190-405	Curriculum Technology/Vocational Education	2
242-201	Presentation Strategies for Home Economics	2
242-301	Home Economics Curriculum	3
413-501	Introduction to Guidance	2
421-303	Educational Psychology	2
466-340	ARC Standard First Aid and Personal Safety	2

Vocational Rehabilitation

22 credits are required.

Required Courses

459-101	Introduction to Rehabilitation	3
459-102	Community Resources	3
459-205	Rehabilitation Practicum	4
459-230	Psychosocial Aspects of Disability	3

Electives

Additional departmental offerings to complete 22 credits will be selected.

Women's Studies

22 credits are required.

Required Courses

300-510	Introduction to Women's Studies	2
300-511	Topics in Women's Studies	1-3
326-372	Women Writers	3
387-275	Sociology of Sex Roles	3
479-574	Psychology of Women	2

Electives

Additional courses to complete 22 credits will be selected with the approval of the adviser.

SPECIALIZATIONS

Introduction

A specialization is a program of study, with carefully constructed learning goals and experiences, and evaluation procedures. UW-Stout offers specializations in Futures Studies, International Studies, Professional Writing, Public Relations/Public Information, and Training and Human Resource Development.

While course work may be included in the specialization, students may also work to meet the learning goals through internships, working with a mentor, successfully completing a proficiency examination or certification examination, or other non-classroom experiences. Courses

may come from several departments and involve faculty from several disciplines.

Courses taken to complete a specialization may also fit elsewhere in a student's program of study. In some cases, an all-university specialization may not increase the length of time required to complete a degree; in other cases, additional time may be needed.

Students who complete a specialization will have the specialization recorded on their transcript and will receive a certificate of completion.

Futures Studies

Increasingly, our society needs people who have the skills and talents to make projections, and to use the concepts and techniques of futures studies. As change increasingly affects our lives, people who have the skill to manage the dynamics of change will be in demand, both personally and professionally, in education, government, the military,

business, industry, the church and volunteer organizations.

The specialization in Futures Studies provides theory and practice in working with projections and related concepts. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Understanding of the concepts, materials and organizations related to Futures Studies.	100-500 Introduction to Futures Study 2 <i>This course will introduce the student to the information and skills necessary to start and continue Futures Studies activities.</i>	Examination, papers and reports, all meeting a minimum grade of 2.0.
2. Ability to employ common futures forecasting techniques within the context of a futures research project.	100-525 Advanced Futures Study 1 <i>This independent study course will focus on projection techniques. The student will experiment with several of the common techniques.</i>	Examination, papers and reports, all meeting a minimum grade of 2.0.
3. Ability to apply the concepts and techniques of Futures Studies to the institution of the family.	195-532 Futures of Technology 2 <i>This course will focus on the three frames of technology, starting with definitions and exploration of others ideas about future possibilities.</i> 212-580 Future of the Family 1 <i>Evaluation of experimental and utopian forms of the family and study of the future of the family.</i>	Examination, papers and reports, all meeting a minimum grade of 2.0.
4. Ability to employ futures studies resources to do futures research.	1XX-X99 Independent Study Literature Search 1 <i>This experience will involve the student more heavily in a particular area of interest and provide an opportunity for some original futures research.</i>	Positive recommendation from the adviser and an annotated bibliography derived from the literature search.
5. Ability to apply the concepts and techniques of futures research to academic purposes.	1XX-XXX Internship in Center for Futures Studies 2 <i>This on-campus experience will provide an opportunity for students to practice the skills learned, to broaden their experiences and to provide a service to the UW-Stout community.</i>	Positive recommendation from Center for Futures Studies director, based on the quality of reports and an assessment of reactions from clients.
6. Ability to conduct futures research within corporate or organizational setting.	1XX-XXX Applied Field Study 2 <i>This off-campus experience will offer a community service and provide a culminating and synthesizing experience for the student prior to an initial position as a practicing futurist. The student will be associated with a community organization able to utilize the talents of a futurist.</i>	Positive reaction from agency with which student has served during the field study (a checklist of criteria will be provided).

International Studies

As the world moves toward the 21st century, people in all countries and cultures are increasingly interacting with each other. Many UW-Stout graduates find work in multinational businesses and international tourism. Others go into the Peace Corps or other types of international volunteer work. Many more use their leisure time for travel or study abroad. Even those who never venture abroad find their professional, civic and personal lives impacted by the expansion of international relationships.

The International Studies specialization at UW-Stout is flexibly designed to offer students an opportunity to better understand other cultures and international relationships, and to compete more successfully in the workplace. The specialization requires all students to complete six core courses or their equivalents, then select an option that best meets their interests and needs.

All students in the specialization are strongly encouraged to plan work or study experience abroad.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1.0 Develop understanding of international relations. 1.1 Develop understanding of concepts used to analyze international relations. 1.2 Recognize participants and patterns of international relationships. 1.3 Identify and analyze global problems arising from international relations.	<i>Complete 15-18 credits as required below.</i> 375-340 International Relations 3 <i>or equivalent course work abroad.</i>	Exams, papers and reports – 2.0 grade point average.
2.0 Develop understanding of cultural variation and analysis. 2.1 Develop understanding of concepts used to analyze cultural variation. 2.2 Recognize and begin to understand the complexity of cultural variation that exists in the world. 2.3 Develop a cross-cultural approach to analyzing international problems.	<i>Select 2-3 credits from the following:</i> 212-685 Seminar–The Culturally Distinct Child and Family 2 303-220 Cultural Anthropology 3 421-536 Multiculturalism: Issues and Perspectives 2 <i>or equivalent course work abroad</i>	Exams, papers and reports – 2.0 grade point average.
3.0 Develop understanding of the geography and peoples of the world. 3.1 Develop understanding of geographical concepts. 3.2 Recognize components of the physical setting in which cultures exist and international relations occur. 3.3 Recognize and analyze the relationships between the physical world, on the one hand, and cultural variation and international relations on the other.	336-104 World Geography 3 <i>or equivalent course work abroad.</i>	Exams, papers and reports – 2.0 grade point average.
4.0 Develop introductory knowledge of a second language.	<i>Equivalent of two semesters of college-level language study in one language – 8 cr.</i>	Exams, papers and reports averaging a grade of 2.0 or certification of equivalent level of proficiency by the language faculty.
5.0 Develop introductory knowledge of the history, culture and/or social institutions of a country or region other than one's own.	<i>One 2-3 credit area studies course. Students are encouraged to take this course work abroad. Students not going abroad should select one of the following courses:</i> 300-220 Modern China and Japan 3 300-250 Soviet Seminar Tour 2 300-X99 Independent Study 1-3 338-315 History of East-Central Europe 3 338-320 History of Russia 3 338-340 English History 3 338-360 Asian History 3 338-380 Latin American History 3 365-315 Eastern Philosophy 3	Exams, papers and reports – 2.0 grade point average.
6.0 Integrate knowledge with experience in another country or culture. 6.1 Study or work in another culture. 6.2 Appreciate diversity of cultural values. 6.3 Integrate intercultural experiences with other knowledge about international relations.	<i>Select one of the following courses:</i> 212-686 Experience: The Culturally Distinct Child and Family 1 300-X99 Independent Study 1-3 303-410 Cultural Orientation and Field Experience Abroad 2 421-576 Field Experience–Cross Cultural Experience 1	Exams, papers and reports – 2.0 grade point average.

Specialized Learning Objectives	Learning Activity	Evaluation
Option A: International Business		
A1.0 Develop understanding of international business practices.	Complete 9 credits as required .	Exams, papers and reports – 2.0 grade point average.
A2.0 Develop understanding of international trade, development, marketing, finance, business law, management and/or transportation.	160-260 Introduction to International Business 3 Select 6 credits from the following: 160-520 Seminar 1-3 160-538 International Logistics 3 160-540 International Business Finance 3 160-585 International Marketing 3 160-588 International Business Practicum 3 320-425 Economic Development 3 320-680 International Trade 3 Internship, field experience or independent study abroad 1-3	
Option B: International Tourism		
B1.0 Identify international components of the tourism industry.	Select 7-9 credits from the following:	Exams, papers and reports – 2.0 grade point average.
B1.1 Recognize the economic role of tourism in a global economy.	245-240 Introduction to Tourism and the Travel Industry 2	
B1.2 Recognize the role of government in planning/development of tourism.	245-640 Sociocultural System of Tourism 3	Exams, papers and reports – 2.0 grade point average.
B1.3 Analyze current issues related to international tourism.	245-645 Geography of Tourism 3	
B1.4 Analyze/become familiar with hospitality and tourism publications.	245-681 Special Problems in Habitational Resources 2	Exams, papers and reports – 2.0 grade point average.
B2.0 Assess quality and quantity of selected tourism resources throughout the world.	Internship, field experience or independent study abroad 1-3	
B2.1 Analyze spatial patterns of connection, circulation, interaction, transportation and communication associated with the geography of tourism.		Exams, papers and reports – 2.0 grade point average.
B2.2 Analyze international tourism’s locational trends.		
B2.3 Develop world map reading skills related to tourism.		Exams, papers and reports – 2.0 grade point average.
B3.0 Analyze current tourism topics.		
B4.0 Experience working in tourism industry abroad.		Exams, papers and reports – 2.0 grade point average.
Option C: Language Studies		
Includes the 8 credits from the core requirement		
C1.0 Develop ability to communicate in a second language.	Equivalent of two years of college-level study of a foreign language. Internship, field experience or other evidence of language use with native speakers is strongly encouraged.	Exams, papers and reports – 2.0 grade point average; or certification of equivalent level of proficiency by the language department.
Option D: Area Studies		
D1.0 Increase understanding of the history, culture and social institutions of a country or region other than one’s own.	Select 8-9 credits from the following: Internship, field experience or independent study abroad 1-3 (Students are encouraged to take area studies abroad and/or select appropriate courses from list in 5.0 of core objectives.)	Exams, papers and reports – 2.0 grade point average.
Option E: Comparative Education		
E1.0 Develop an understanding of the sociopolitical context of education in other countries.	Select 6 credits from the following:	Exams, papers and reports – 2.0 grade point average.
E2.0 Develop an understanding of teaching practice appropriate to other countries.	421-502 Global Perspectives for Educators 3 421-XXX Comparative Education 3 Internship, field experience or independent study abroad 1-3	
Option F: Apparel Design/Manufacturing – Retailing		
F1.0 Increase understanding of international economic trends influencing textiles, clothing and related areas.	Complete 8-9 credits as required:	Exams, papers and reports – 2.0 grade point average.
F2.0 Develop understanding of international centers serving the fashion, clothing, textiles and related arts area.	214-519 International Economic Trends in Textiles and Clothing 3 Select 5-6 credits from the following: 214-610 History of Costume – Ancient to European 3 214-611 History of Fashion – 19th Century to Present 3 214-617 Social/Psychological Aspects of Clothing 3 and/or select up to 3 credits from the following: 214-477 Study Abroad – American Fashion College 3 214-605 International Study Tour to the Fashion Industry 2-3 Internship, field experience or independent study abroad 1-3	
F3.0 Increase understanding of international historical influences on present day fashion and clothing.		

Professional Writing

The Professional Writing specialization, unlike other programs at UW-Stout, is creation-oriented not production-oriented.

The specialization addresses an area of critical importance – clearly communicating information. The program is intended for those who wish to gain professional writing skills to help them find employment, and those who wish to improve their writing skills to gain promotions

or explore new career directions. Graduates of this program will be able to clarify technical concepts for a wide range of audiences, especially non-technical ones.

The specialization will integrate various elements of degree programs – writing, public relations, design, graphic arts and others – in one efficient package.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Interact with clients in order to produce their documents.	Follow a sequence of activities, under supervision, to produce a document, starting with an initial interview and progressing to a final document. 326-310 Journalism Practicum 1 326-399 Independent Study or 326-X49 Cooperative Education Program in Liberal Studies 2-3 326-537 Technical Writing Practicum* 2-3 479-579 Public Relations* 2 479-679 Advanced Public Relations 2	1. Review of completed documents by teacher. 2. Acceptance of document by client. 3. Client's evaluation of writer as having adequately performed at all stages in the sequence-use questionnaire.
2. Design documents according to client specifications.	Under supervision of a teacher, learn basic principles of document design. Under supervision of a teacher, determine client's design needs. Produce document. 326-310 Journalism Practicum 1 326-399 Independent Study or 326-X49D Cooperative Education Program in Liberal Studies 2-3 326-537 Technical Writing Practicum* 2-3 479-579 Public Relations* 2 479-679 Advanced Public Relations 2	1. Review of completed design by teacher. 2. Acceptance of design by client.
3. Write and produce a final document by following a logical production procedure.	Structure sequence of activities that teach students the stages of interacting with a printer to produce a final version of a document. 130-140 Graphic Arts* 2 130-246 Typography 2 130-509 Business Applications in Desktop Publishing 1-2 130-545 Publications Production 2 304-210 Letter Form Design 3 326-399 Independent Study or 326-X49D Cooperative Education Program in Liberal Studies 2-3 326-537 Technical Writing Practicum* 2-3	1. Evaluation of writing by teacher–oral, exercises. 2. Acceptance of text by client. 3. Presentation of final document by writer. 4. Teacher's evaluation of adequate performance at all stages in the sequence–observations.
4. Adapt, direct and produce information for a particular audience.	Structured sequence of activities which train students in concepts of audience adaptation and develop flexibility in adapting to audience. 326-310 Journalism Practicum 1 326-320 Business Writing 3 326-346 Informational Writing 3 326-399 Independent Study or 326-X49D Cooperative Education Program in Liberal Studies 2-3 326-425 Copy Editing and Preparation* 2 326-515 Technical Writing 3 326-537 Technical Writing Practicum* 2-3	1. Teacher evaluation that student has conceptual knowledge of adapting for an audience–tests, exercises. 2. Teacher evaluation that student has flexible ability in adapting for an audience–exercises.
5. Organize and present written material in a clear, concise manner.	Structured sequence of activities which train students in organizing for a particular audience situation. 326-301 Advanced Grammar* 2 326-310 Journalism Practicum 1 326-320 Business Writing 3 326-346 Informational Writing 3 326-399 Independent Study or 326-X49D Cooperative Education Program in Liberal Studies 2-3 326-425 Copy Editing and Preparation* 2 326-515 Technical Writing 3 326-537 Technical Writing Practicum* 2-3	1. Teacher evaluation that student has acceptable conceptual knowledge of organization and concise presentation–exercises. 2. Teacher evaluation that student has flexibility in presenting different organizations–exercises. 3. Acceptance of text by client.
6. Produce information according to business and industry standards of style.	Structured sequence of activities which train students in style concepts and flexibility. 326-301 Advanced Grammar* 2 326-320 Business Writing 3 326-346 Informational Writing 3 326-399 Independent Study or 326-X49D Cooperative Education Program in Liberal Studies 2-3 326-515 Technical Writing 3	1. Teacher evaluation that student has acceptable level of style conceptual knowledge–tests, exercises. 2. Teacher evaluation that student has acceptable style flexibility–exercises. 3. Acceptance of text by client.

* Required courses. A student may petition the specialization program director for an exception to the required courses based upon prior experience and may choose another course in the block. This specialization requires a minimum of 12 credits (10 credits of required courses and 2 credits of electives).

Public Relations/Public Information

This specialization is a suitable support program for undergraduate students enrolled in any program the university offers. Virtually every area of professional preparation can benefit from the study of public relations/public information. Institutions and organizations are increasingly aware of the need for sound management practices when dealing with publics and the value of those practices to society.

If UW-Stout students are to achieve their professional goals, they must be competent in developing relationships with many different organizations and understanding the attitudes and values represented by those organizations. Students completing this specialization would be better able to utilize professional communication skills, play an

integrative role in organizational management, assist in the definition and implementation of policy, and represent the organization's rights and responsibilities to the various publics.

Students should apply for the specialization one year before completing the requirements for it. To be admitted to the specialization, a student must have completed 12 credits in the behavioral and/or social sciences and six credits in business or business-related course work.

The specialization will be awarded to the student once all course work required for it has been completed and a minimum 3.0 grade point average has been earned in those courses.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Anticipate and identify public opinion.	Complete the following courses: 479-577 Consumer Psychology 3 479-579 Public Relations 2	Demonstrate recognition and comprehension of public opinion through minimum 2.75 grade point average on course expectation.
2. Interpret and communicate public opinions' effect on the plans and operations of an organization.	Complete the following courses: 479-577 Consumer Psychology 3 479-579 Public Relations 2	Demonstrate the ability to assess the effect of public opinion on organizations through minimum 2.75 grade point average on course expectation.
3. Recognize socially responsible behavior on the part of organizations.	Complete the following courses: 365-375 Personal and Professional Ethics 3 479-577 Consumer Psychology 3 479-579 Public Relations 2	Demonstrate ability to identify organizational behavior that is socially responsible through minimum 2.75 grade point average on course expectation.
4. Anticipate public reaction to organization's policy decisions and courses of action.	Complete the following courses: 391-200 Persuasive Speaking 2 479-679 Advanced Public Relations 2	Demonstrate awareness of public reaction to organizational activity through minimum 2.75 grade point average on course expectation.
5. Enhance the organizational image through advice to management.	Complete the following courses: 391-200 Persuasive Speaking 2 479-679 Advanced Public Relations 2	Demonstrate talent to provide sound advice regarding organizational image through minimum 2.75 grade point average on course expectation.
6. Design and conduct organizational audits (using approved public relations research techniques).	Work on problem-based projects from the following: 479-579 Public Relations 2 479-679 Advanced Public Relations 2 479-693 Field Practicum in Public Relations Specialization 1-3	Provide evidence of ability to develop tools for assessment and investigation of external and internal publics.
7. Compile and analyze data.	Work on problem-based projects from the following: 479-579 Public Relations 2 479-679 Advanced Public Relations 2 479-693 Field Practicum in Public Relations Specialization 1-3	Demonstrate comprehensive analysis through reports and presentations.
8. Set objectives, plan and budget resources for public relations/public information activities.	Complete the following courses: 479-679 Advanced Public Relations 2 479-693 Field Practicum in Public Relations Specialization 1-3	Provide evidence of ability to set program goals and objectives and develop program budget.
9. Develop program strategies.	Complete the following courses: 130-103 Communication and Information Technology 3 326-346 Informational Writing 3 479-679 Advanced Public Relations 2	Demonstrate ability to select appropriate audience, messages and media to carry out program goals and objectives through reports from field supervisors.
10. Implement campaigns to influence organizational goals.	Complete the following courses: 130-103 Communication and Information Technology 3 326-346 Informational Writing 3 479-679 Advanced Public Relations 2	Demonstrate ability to accomplish campaigns/programs through reports from field supervisors.
11. Evaluate public relations/public information programs.	Work on problem-based projects from the following: 479-579 Public Relations 2 479-679 Advanced Public Relations 2 479-XXX Practicum Experience 1-3	Provide evidence of campaign/program success or failure through examination and evaluation of actual outcomes.

Training and Human Resource Development

Education is not the sole province of schools. Programs of instruction are conducted by many businesses, industries, in the military, and by other groups and organizations. Planning and providing this instruction is the province of professionals usually identified as "trainers." In our technological society, training programs have become increasingly complex and demands on trainers have increased. Greater expertise on their part is required. This all-university specialization addresses needs for

preservice and in-service education for trainers.

This program is intended for students who have expertise in areas such as engineering, technology, education, business, government, military and labor, and who desire to become involved in development and implementation of training programs. Contact the Office of the Dean, School of Industry and Technology, for further information.

Requirements for the Specialization

Note: Courses numbered 700 and greater are open to graduate students only.

Intended Outcome	Learning Activity	Evaluation
1. Introduction to concepts of training and human resource development.	198-550 Introduction to Industrial Training <i>or</i> 198-560 Training Systems in Business and Industry 2-3	
2. Utilize acceptable analysis procedures in determining training needs in the trainer's professional area.	198-550 Introduction to Industrial Training 2 198-589 Training Internship 2-8 199-534 Task Analysis 2 <i>Select one of the following:</i> 150-600 Organizational Leadership <i>or</i> 479-582 Human Resource Management 3	Successful completion of courses at left (7 credits). Successful completion of the contractual agreement of the internship as determined by the UW-Stout supervisor in consultation with the business, industry, government or military supervisor, and successful completion of a field report. (Minimum 4 credits)
3. Design a training program based on established needs.	120-560 Audiovisual Communications 2 198-589 Training Internship 2-8 <i>Complete a course from the appropriate school in curriculum development or course construction (2-3 credits) such as:</i> 190-405 Curriculum Technology/Vocational Education 2 190-638 Course Construction 2 196-401 Marketing Education Curriculum 3 199-638 Course Construction for Vocational Educators 2 242-301 Home Economics Curriculum 3 421-438 Curriculum Development 2 <i>Complete a course on the psychology of learning (2 credits) such as:</i> 199-674 Adult Education 2 421-303 Educational Psychology 3 479-530 Psychology of Learning 3 <i>Complete a course on teaching methods or strategies (2 credits) such as:</i> 190-205 Teaching Methods Technology/Vocational Education 2 196-301 Marketing Education Methods 4 199-605 Methods of Teaching Vocational Education 2 242-201 Presentation Strategies for Home Economics 2 421-714 Teaching Strategies 4	Successful completion of courses at left (minimum 8 credits). Successful completion of the contractual agreement for the internship as evaluated by the business, industry, government or military supervisor, and by the UW-Stout supervisor. Completion of a field report is required.
4. Implement and coordinate a training program; design and teach training courses.	198-589 Training Internship 2-8	Successful completion of the contractual agreement for the internship. Success is evaluated by the business, industry, government or military supervisor, and by the UW-Stout supervisor. Completion of a field report is required.
5. Evaluate the effectiveness of training courses or programs.	198-589 Training Internship 2-8 <i>Complete a course on evaluation and/or program evaluation (2 or 3 credits) such as:</i> 190-406 Evaluation in Technology/Vocational Education 2 199-640 Instructional Evaluation in Vocational Education 2 242-710 Applied Evaluation in Home Economics 2 421-641 Education Evaluation 2 421-742 Program Evaluation 3	Successful completion of a course at left. (Minimum 2 credits). Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the UW-Stout supervisor. Completion of a field report is required.

Course Descriptions



Interpreting Course Descriptions

School/Curricular Codes

UW-Stout uses a six-digit course numbering system. The first three digits designate the school offering the course and the curricular code.

School of Industry and Technology

- 100 Interdepartmental
- 120 Media Technology
- 130 Graphic Communications
- 140 Safety and Loss Control
- 150 Industrial Management
- 160 Business Administration
- 181 Manufacturing
- 182 Construction
- 183 Design, Research and Development
- 184 Electricity/Electronics
- 185 Power
- 186 Transportation/Energy
- 190 Industrial Teacher Education
- 195 Technology
- 196 Marketing Education
- 198 Training and Human Resource Development
- 199 Vocational Education

School of Home Economics

- 200 Interdepartmental
- 212 Human Development and Family Living
- 214 Apparel, Textiles and Design
- 229 Food and Nutrition
- 242 Home Economics Education
- 245 Hospitality and Tourism

School of Liberal Studies

- 300 Interdepartmental
- 303 Anthropology
- 304 Art
- 305 Art Education
- 308 Biology
- 311 Chemistry
- 312 Industrial Hygiene
- 320 Economics
- 326 English and Journalism
- 328 French
- 329 Spanish
- 330 Chinese
- 331 German
- 336 Geography
- 338 History
- 354 Applied Mathematics
- 355 Mathematics
- 360 Music
- 365 Philosophy
- 372 Physics
- 375 Political Science
- 387 Sociology
- 391 Speech

School of Education and Human Services

- 413 Counseling
- 421 Education
- 431 Special Education
- 459 Vocational Rehabilitation
- 466 Physical Education and Athletics
- 467 Physical Education and Athletics
- 479 Psychology
- 489 School Psychology

Academic Affairs

- 500 Transdisciplinary

Course Level

The second three digits of the course number refer to the course level. The 100 series is primarily for freshmen; 200 – sophomores; 300 – juniors; and 400 – seniors. The 500 series is junior/senior level but is also appropriate for graduate credit. The 600 series is senior and graduate level.

Credits

One credit hour usually represents one hour of class time per week plus two hours of out of class study.

130-366

3 Credits

Image Transfer

Preparation of image carriers and printing on paper and other substrates; lithography, flexography, gravure, screen printing, electrostatics, and associated procedures for transferring images from film to substrate; reproducing line and half-tone copy in one or more colors; image/film assembly, step and repeat, multiple page imposition, platemaking, press systems, densitometry, ink, paper problems and quality control.

P: 130-140 or consent of instructor. **\$FWS**

Course Planning Codes

Codes following the descriptions help you as you plan your course schedules.

P = Prerequisites are required as described.

\$ = A special course fee applies.

R = Course is repeatable for credit.

GEXXXXX XXX* = General Education course.

*The letters which follow **GE** indicate the particular general education category the course applies to. See page 22, General Education Requirements, for further clarification if needed.

ES-A = Ethnic Studies level A course.

ES-B = Ethnic Studies level B course.

ES-C = Ethnic Studies level C course.

F = Course is offered during fall semester.†

W = Course is offered during winter semester.†

S = Course is offered during summer session.†

†These codes serve only as a general guide and do not guarantee that a course will be offered during a particular semester. Uncoded courses follow no usual pattern.

The Registration and Records Office publishes the "Timetable," prior to fall and winter semesters, which lists the courses offered in a particular semester and the "Summer Session Early Bulletin for On-Campus Students," which lists the courses offered in a particular summer session.

Interdepartmental – Industry and Technology

100-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

100-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

100-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

100-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

100-500 2 Credits

Introduction to Futures Study

Methods of future projection, orienting thought toward future alternatives; impact of future problems on major areas of human activity. F

100-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

100-590 .5-6 Credits

Technical Service Schools

Some special-purpose technical courses offered by manufacturers are suitable for college credit. Guidelines: 1) student makes all arrangements with manufacturer offering course; 2) one credit is awarded for each full week (40 clock hours) of attendance; 3) student enrolls and pays fees at university prior to taking course; 4) approval of dean of School of Industry and Technology needed before enrolling for credit; 5) Graduate College approval required for students taking course for graduate credit. S

100-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

Media Technology

120-180 2 Credits

Microcomputer Applications – Words/Data

Applications of specific commercial microcomputer programs for personal, professional and student use. Emphasis on word processing, numerical and file management programs. WS

120-504 2 Credits

Elementary Photography

Fundamentals of photography: aesthetics, basic theory, camera operation, film selection, lighting, roll-film processing, contact printing, enlarging and print finishing. Student must provide own camera. \$ FWS GEHUMART CR/PRF

120-535 3 Credits

Film – History and Appreciation

Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers. F

120-540 2 Credits

TV – Appreciation and Criticism

Analysis of major TV program types; positive and negative contributions of TV; commercials; children's programming; TV viewing diary; development of TV action plan. \$ W

120-560 2 Credits

Audiovisual Communications

Methods of evaluating and using audiovisual materials effectively; experience in operating equipment; basic techniques of media preparation. FWS

120-561 2 Credits

Advanced Graphic Production

Advanced techniques for planning, designing and producing materials for instruction and graphic training.

P: 120-560. \$ FW

120-570 3 Credits

Computer-Assisted Interactive Video

Design, production and evaluation of interactive video applications. Analysis of various hardware and software systems.

P: consent of instructor or curriculum course. \$ S

120-600 1-3 Credits

Workshop

Special topics in media technology providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R FWS

120-600A 1-3 Credits

Workshop

Special topics in media technology providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R FWS

120-605 2 Credits

Advanced Photography

Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques.

P: 120-504. \$ FWS

120-612	2 Credits	Nature Photography Fundamentals of camera techniques composition, aesthetics, exposure and light in relationship to animals, plants, water, weather and landscapes. special emphasis on proper photographic equipment and field techniques for nature photography. P: 120-504 or consent of instructor. Camera required. FWS	130-149	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
120-614	1 Credit	Slide Duplication and Copystand Techniques Selection and use of equipment for copystand work and slide duplication, discussion of and practice with filters and multiple exposures. P: 120-504 or consent of instructor. S	130-197	1 Credit	Field Experience R FWS
120-625	1-4 Credits	Broadcast TV Production Internship Practical experience in all phases of broadcast color television program production. Student develops internship program with teleproduction center manager. One credit per 40 hours of work experience. P: 120-630 and 120-632 or consent of instructor.	130-198	1-2 Credits	Field Experience FWS
120-630	3 Credits	Audio/Film Production Fundamentals A survey of audio and video production fundamentals applied to the process of instructional communication. \$ FS	130-246	2 Credits	Typography Printing and art mediums, photography, layout and keylining, type classification and selection, composition practices, color systems and materials. Lab work in preparing copy for production. P: 130-140 or consent of instructor. FW
120-640	2 Credits	Telecommunication Systems and Teleconferencing Interactive teleconferencing techniques. Applications, effective utilization and cost-effectiveness of information distribution systems, including telephone, television, teletext, videotext, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics. \$ FWS	130-249	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
120-645	2 Credits	Color Photography Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. P: 120-504. \$ FWS	130-251	3 Credits	Composition Photo-typesetting; photo-lettering, text and editing systems; pasteup and copy preparation techniques; copyfitting, word and image processing, telecommunications and interfacing to computer systems. P: 130-140 or consent of instructor. \$ FWS
120-654	1 Credit	Small Format Video Production Selection of small format video systems to meet varied production needs. Planning and shooting video programs using BETA or VHS camcorders or 8mm equipment. Participants must provide their own personal or institutional video equipment. S	130-263	2 Credits	Flexography and Gravure Flexographic and rotogravure printing processes. Design for flexo and gravure, film and image assembly, plate and cylinder preparation and printing by the two processes. Present applications and future trends. P: 130-140. S
130-103	3 Credits	Graphic Communications Communication and Information Technology Limits and possibilities of various communication components and systems applied to the solution of communication problems in business and industry. Intended for General Business Administration students. Credit not available to students who have completed 130-100. FWS GETECH	130-281	3 Credits	Data Communications Terminology, systems, services, technologies, costs and applications of data communications. P: 130-103. F
130-140	2 Credits	Graphic Arts Concepts of reproducing visual images; design and layout, composition, photo conversion, image carriers, image transfer, finishing and binding, and economics of graphic arts. \$ FWS	130-283	3 Credits	Protocols and Interfacing Laboratory Common and de facto standard telecommunication protocols used for interface control, flow control, and for data link control. Diagnose telecommunications interface problems with representative equipment. P: 130-281. FWS
			130-297	1 Credit	Field Experience R FWS
			130-298	1-2 Credits	Field Experience FWS

130-349	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS	130-500	1-3 Credits	Workshop Special topics in graphic communications, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. R FWS
130-355	2 Credits	Line and Halftone Photography High contrast photography in graphic reproduction processes; dealing with line, halftone, duotone, and special-effect film negatives and positives. P: 130-140 or consent of instructor. \$ FWS	130-504	1-3 Credits	Communications and Information Systems Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information. P: 130-103. \$ FWS
130-359	2 Credits	Image Assembly and Platemaking Prepress operations and systems. Imposition, film assembly, contacting, proofing, offset platemaking and automated prepress systems. P: 130-140. \$ S	130-505	3 Credits	Office Automation Technology Automation information concepts and technology used in office including communication, storage and retrieval systems. Emphasis on cost effective selection and implementation problems. P: 130-103 or consent of instructor. FWS
130-366	3 Credits	Image Transfer Preparation of image carriers and printing on paper and other substrates; lithography, flexography, gravure, screen printing, electrostatics, and associated procedures for transferring images from film to substrate; reproducing line and halftone copy in one or more colors; image/film assembly, step and repeat, multiple page imposition, platemaking, press systems, densitometry, ink, paper problems and quality control. P: 130-140 or consent of instructor. \$ FW	130-506	2 Credits	Introduction to Telephony Principles of current technologies, systems, and trends in telephone communication systems design and applications. \$ FW
130-370	2 Credits	General Binding Finishing, fastening and covering printed materials: mechanical, loose-leaf, wire staple, sewn and perfect binding. P: 130-140 or consent of instructor. \$ FW	130-507	2 Credits	Artificial Intelligence Applications in Business Artificial intelligence applications in business and industry with emphasis on office information system characteristics and implementation. P: 130-505. FW
130-397	1 Credit	Field Experience R FWS	130-509	1-2 Credits	Business Applications in Desktop Publishing Office automation and information systems for generating business formats on a computer network. Computerized forms, summaries, and related graphics utilizing automated pagination software, and existing software systems print commands with laser printer characteristics. FWS
130-398	1-2 Credits	Field Experience FWS	130-543	2 Credits	Graphic Arts Production Techniques The study of techniques associated with the production of two-dimensional printed media, with emphasis on design, production and evaluation, also including client and printer relationships. P: 130-366. R FWS
130-449	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS	130-545	2 Credits	Publications Production Principles of designing, printing and distributing publications for business, education and industry. P: 130-140. FW
130-475	3 Credits	Printing Economics Estimating production costs, specification of equipment, production scheduling, facility planning, materials inventory and control, and systems that expedite graphic reproductions. P: 130-140. FW	130-549	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
130-497	1 Credit	Field Experience R FWS	130-557	2 Credits	Color Separation Color separation from reflected and transmission copy; filters and densitometry; direct and indirect photographic color separation methods. P: 130-355 or consent of instructor. \$ FW
130-498	1-2 Credits	Field Experience FWS			

130-561 .5-2 Credits

Screen Printing

Screen printing technology—applications, components and techniques. Survey of various materials and equipment used in screen printing. Production of screen printed products. **P:** 130-140 or 304-518 or consent of instructor. **\$ FWS**

130-581 4 Credits

Advanced Voice and Data Systems

Digital communications theory as applied to voice applications and the design and management of a data communication network. **P:** 130-283. **F**

130-582 3 Credits

Network Systems Design

Analysis, design and implementation considerations of a telecommunications network. **P:** must be enrolled in Telecommunication Concentration or consent of instructor. **W**

130-595 1-2 Credits

Seminar

(Title will reflect specific graphic and industrial communication content). Current and projected communication methods, concepts, technologies and innovations in graphic communications. **R FW**

130-597 1 Credit

Field Experience R FWS

130-598 1-2 Credits

Field Experience FWS

130-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

130-681 3 Credits

Telecommunications Systems Administration

Issues and concerns required to manage telecommunications networks and contemporary problems. **P:** must be enrolled in Telecommunication Concentration or consent of instructor. **F**

130-697 1 Credit

Field Experience R FWS

130-698 1-2 Credits

Field Experience FWS

Safety and Loss Control

140-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

140-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

140-271 3 Credits

Safety Principles and Practices

Principles of accident prevention, school safety programs, identification of resources and content: motor vehicle, home, public, farm, industrial, school, recreational and civil defense.

140-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

140-374 3 Credits

Driver Education Laboratory Methods and Techniques

Role, aims and objectives of laboratory programs in driver and traffic safety education; multiple-student teaching techniques, simulation on-street behind-the-wheel and multiple-car driving range experiences provided.

140-375 3 Credits

Driver and Traffic Safety

Classroom phase of driver education: curriculum selection and use, instructional resources and materials, and driver education administration. **FWS**

140-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

140-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

140-574 2-3 Credits

Alcohol, Drugs and Accident Prevention

Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers. **FWS**

140-575 2-3 Credits

Behavioral Approach to Accident Prevention

Behavioral aspects of accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior. **FWS**

140-581 2-3 Credits

Occupational Safety/Loss Control

Overview of occupational accident prevention programs: techniques of measurement, cost of accidents, locating and identifying accident sources and problems of selecting corrective action. **P:** junior standing. **FWS**

140-583 2-3 Credits

Voluntary OSHA Compliance

Implications of federal Occupational Safety and Health Act of 1970 on industrial operations, systematic self-inspection and compliance procedures. **FW**

140-584 2 Credits

Safety Engineering Standards

Analysis of legal and voluntary industrial workplace standards and regulations. **F**

140-586 3 Credits

Fire Protection/Prevention

Behavior of fire: chemistry, protection, prevention and control. **W**

140-587 3 Credits

Human Factors Engineering

Man's physiological and psychological abilities in man/machine interface, working performance, reliability, comfort and safety; effective design of man and work environment as a cybernetic system.

P: 479-110, 354-130 or consent of instructor. **F**

140-588 2 Credits

Construction Safety

Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems. **FW**

140-589 2 Credits

Fleet Safety Management

Controlling loss associated with motor fleet operations: selection, training and supervision of commercial drivers; regulatory controls. **W**

140-590 2 Credits

Product/Service Liability

An analysis of product liability losses, laws and controls. **F**

140-649 2-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

Industrial Management

150-120 3 Credits

Quality Concepts

Introduction to quality, quality systems, and quality management through a survey of the various principles, techniques and procedures used by various organizations and/or managers to assure customer satisfaction of product and/or service.

150-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

150-150 2 Credits

Industrial Organization

Basic functions and interrelationships of major subdivisions of industrial organizations. **P:** Industrial Technology major or consent of instructor.

150-200 3 Credits

Production/Operations Management

A broad analytical "systems" viewpoint is used to develop competency in management decision-making and problem solving in an operations setting.

P: math proficiency as demonstrated by the Math Placement Test. **FWS**

150-220 3 Credits

Quality Systems - Service Industries

Method, procedures and administration of quality technologies for business and service industries. Analysis, documentation of standards and applied research. **FW**

150-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

150-298 1-2 Credits

Field Experience

Off-campus work and study in an approved position to better understand business and industrial concepts and practices. **R FWS**

150-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

150-397 1 Credit

Field Experience FWS

150-398 1-2 Credits

Field Experience

Off-campus work and study in an approved position to better understand business and industrial concepts and practices. **R FWS**

150-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

150-450	2 Credits	Maintenance Management Organization and management of facilities management system: administration of maintenance forces, maintenance of personnel, planning and scheduling of work, maintenance of basic environmental systems, project control and cost control for maintenance operations.
150-489	1-8 Credits	Business and Industrial Internship Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. P: junior standing or consent of department chair. R FWS
150-497	1 Credit	Field Experience FWS
150-498	1-2 Credits	Field Experience Off-campus work and study in an approved position to better understand business and industrial concepts and practices. R FWS
150-500	2-3 Credits	Engineering Economy Source and application of funds: cost control, valuation, depreciation, replacement theory and taxation. P: 150-200 or consent of instructor. FWS
150-501	1-2 Credits	Seminar (Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled.
150-501A	1-2 Credits	Seminar (Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled.
150-502	1 Credit	Time Management Elements of time management, strategies and techniques in industrial and business environments. Analysis of time use by all levels of management.
150-505	3 Credits	Product and Inventory Control Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling material, parts, sub-assemblies, and final assemblies of a manufacturing system. P: 150-200 or 354-130 or 354-530 FW
150-510	3 Credits	Production Processing Production processes, especially product design as related to economic production; factors that influence choice and sequence of process to obtain end product. P: 150-200. FW
150-514	3 Credits	Industrial Enterprise Practicum Organization and operation of an industrial company; election, designing, production planning, production, marketing and distribution of a product. P: 150-150. FW
150-520	3 Credits	Quality Assurance Practical and statistical quality control in design and use of quality assurance programs: quality engineering, manufacturing quality assurance and product quality assurance. P: 150-200, 354-130 or 354-530. FW
150-525	3 Credits	Quality Management Provides the managerial and technical knowledge necessary to prepare, document, manage, and evaluate quality systems from beginning design through system operation and post-delivery customer services within a product or service environment. P: 150-220 and 150-520. FW
150-530	3 Credits	Material Handling Principles of material handling; handling function, its role in production activities and problems of handling materials in industrial settings. P: 150-200. FW
150-540	3 Credits	Time and Motion Study Methods engineering in business and industry: improving methods of performing and measuring work done by individuals or groups through motion analysis, charting techniques and principles of motion economy. P: 150-200. FW
150-549	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
150-550	3 Credits	Plant Layout Principles and methods of solving plant layout and material handling problems. P: 150-200. FW
150-597	1 Credit	Field Experience FWS
150-598	1-2 Credits	Field Experience Off-campus work and study in an approved position to better understand business and industrial concepts and practices. R FWS
150-600	3 Credits	Organizational Leadership Supervisor's role in attaining organizational objectives through human resources management; supervisory skills of communication, motivation, initiation of change, discipline, delegation and grievance handling developed on basis of organizational and individual behavior concepts. P: senior or graduate standing. FWS ES-C
150-605	2 Credits	Production and Inventory Control Practicum Application of principles and techniques learned in 150-505 as part of professional semester/manufacturing laboratory. P: 150-505.

150-615 2 Credits

Women and Minorities in Management

An examination of current status of women and minorities in management positions such as managerial styles of women and minorities, coping skills for managerial women and minorities, specific leadership techniques, and changing and leading organizations to minimize discrimination.

P: 150-600 or 160-304 and 387-110, significant experience or consent of instructor. **W ES-B**

150-620 4 Credits

Quality Assurance - Practicum

Application of principles and techniques learned in 150-520, as part of professional semester/manufacturing laboratory. **P:** 150-520.

150-630 2 Credits

Employee Involvement: Work Teams

Background and history of employee involvement, teams as a method of employee involvement, analysis of the advantages and disadvantages of different team structures and the planning processes used to implement team structures, analysis of situational variables used to help design the best team approach for an organization, the support systems needed to maintain teams, phases of team development, facilitation skills, and team problem-solving methods. **P:** senior standing or graduate standing or consent of instructor. **S**

150-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

150-660 2 Credits

Industrial Management

Principles and methods of analyzing and solving industrial problems; application through case studies, management games and special problems.

P: senior standing.

150-680 2 Credits

Production Management Practicum

Application of principles and techniques of analyzing and solving production management problems learned in prior course work to manufacturing project in manufacturing laboratory. **P:** consent of instructor. **FW**

Business Administration

160-100 1 Credit

Introduction to Business Administration

Basic business systems processes, their interrelationships and role of business environment. Business administration program: advisement, course sequence and job opportunities.

P: consent of instructor or General Business Administration major. **FW**

160-115 2 Credits

Understanding Business

Concepts, functions, and interrelationships of various subdivisions of service and production organizations.

160-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

160-200 3 Credits

Financial-Managerial Accounting-Industrial Technology

Survey of financial accounting concepts for a sole proprietorship, partnership and corporation. Coverage of some managerial accounting concepts such as budgeting and financial statements analysis. (*Designed for Industrial Technology majors only.*) **FW**

160-206 3 Credits

Introduction to Financial Accounting

Theory of debit and credit, principles of accounting records, modern business papers, working sheets, balance sheets and income statements and sole proprietorships. **P:** sophomore standing. **FWS**

160-207 3 Credits

Introduction - Corporate and Managerial Accounting

Development of basic accounting theory from 160-206: partnership and corporate forms of organization; branch and manufacturing accounting; cost accounting, budgeting, and analysis and interpretation of financial statements.

P: 160-206. **FWS**

160-235 3 Credits

Small Business Management

Introduction to the various aspects of business management, especially at the level of small business. **P:** junior standing.

160-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

160-260 3 Credits

Introduction to International Business

Introduction to the interaction of foreign business, politics, culture, societies on basic international business systems. Basic terminology of international business is of primary importance. **P:** sophomore standing. **FWS**

160-304 3 Credits

Principles of Management

Basic managerial functions: planning, organizing, staffing, directing and controlling; management principles with universal applications; nature of authority and responsibility, departmentation, line and staff relations; enterprise manager in the social setting, comparative management; and management and the future. **FWS**

160-310A 2 Credits

Special Topics - Management Information Systems

Improving the practice of business management through the utilization of computer software management information systems. An information system aids management in making, carrying and controlling decisions. **R**

160-310B	2 Credits	Special Topics - Management Information Systems Improving the practice of business management through the utilization of computer software management information systems. An information system aids management in making, carrying and controlling decisions. P: 160-310A. R	160-337	3 Credits	Purchasing Exploration of decision-making process used in purchasing goods and services; procurement process, paper flow, economics of purchasing and legal aspects. P: 160-330.
160-310C	2 Credits	Special Topics - Management Information Systems Improving the practice of business management through the utilization of computer software management information systems. An information system aids management in making, carrying and controlling decisions. R	160-340	3 Credits	Business Finance Concepts of raising, allocating and controlling capital for business entities; analysis of the income tax system and its relevance with business decisions; analysis of financial data in making investment decisions. P: 160-207, 354-130 or equivalent, and 355-123 or equivalent. FWS
160-312	3 Credits	Cost Accounting Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting. P: 160-206. FW	160-349	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
160-318	3 Credits	Business Law I Introduction to the nature of law, the legal system and the judicial process; also includes contracts, sales of goods and agency. P: junior standing. FWS	160-355	3 Credits	Principles of Risk Management An overview of the role of management of risks in business with emphasis on identification of risks and evaluation to determine methods of handling them. We will consider all methods with emphasis on insurance. P: junior standing. F
160-319	3 Credits	Business Law II A continuation of Business Law I; includes property secured transactions, bankruptcy, estates, commercial papers, partnerships and corporations. P: 160-318. S	160-365	2 Credits	Principles of Real Estate Overview of transactions in real estate, examination of the law as it relates to nature of real property, interests in real property, acquiring ownership, brokerage, real estate sales contracts, financing, land use control, and leasing and property management. FW
160-320	3 Credits	Income Tax Accounting General conceptions of U.S. tax law and its effect on individual partnerships and corporate decisions. Computation of federal and state taxes for individuals. P: 160-206. FW	160-370	3 Credits	Principles of Advertising Psychological, social and economic aspects of advertising in relationship to other aspects of distribution and its place in modern business. P: 160-330. FWS
160-330	3 Credits	Principles of Marketing Retail, wholesale, advertising, channels of distribution, cooperative marketing, pricing, marketing research and marketing legislation from consumer's, middleman's and manufacturer's standpoint. FWS	160-380	3 Credits	Direct Response Marketing Concepts, strategies/applications involved in direct marketing, including scope of direct marketing, launching direct marketing programs, market segmentation, developing/production, pricing, customer services, and response/performance measures. Industrial and final consumer direct marketing. P: 160-330 and junior standing or above.
160-333	3 Credits	Management Information Systems - Decision Support Systems Improving the practice of business management through utilization of computer software based management information systems (MIS). Employs spreadsheet software as an aid to management in making, implementing and controlling decisions. P: 160-206 or concurrent registration. FW	160-398	1-2 Credits	Business Administration Field Experience Off-campus work and study in an approved position to better understand the challenges of being an effective manager. R FWS
160-334	3 Credits	Salesmanship and Sales Management Concepts of selling: locating prospects, securing and conducting sales presentations, analyzing and handling different types of customers, closing sale, maintaining goodwill. Sales organizations: recruitment, selection, training compensation and cost control methods. P: 160-330. FWS	160-410	3 Credits	Manufacturing Cost Analysis Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting for a manufacturer. P: 160-206 or 160-200. FW
160-335	3 Credits	Accounting for Management Decisions Interpretation of financial statements, internal control, budgeting, costing of products manufactured and sold, analysis of cost-volume-profit decisions. Data presented without mechanical techniques. P: 160-207. FW			

160-436	3 Credits	Marketing Management Examination of the marketing place with emphasis on unique characteristics of the marketing environment. Special emphasis on case study analysis and discussion. P: 160-330 and 160-207 and one advanced-level marketing course beyond 160-207.	160-549	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
160-438	3 Credits	Industrial Distribution Principles of logistics management as applied to industrial distribution channels. Examines channel structure, objectives and strategies. Emphasizes the role of transportation, warehousing and inventory in providing customer service. P: 160-330. F	160-573	3 Credits	Legal Aspects of Construction Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker.
160-449	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS	160-585	3 Credits	International Marketing Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms. P: 160-330.
160-489	1-8 Credits	Business and Industrial Internship Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. P: junior standing or consent of department chair. R FWS	160-588	3 Credits	International Business Practicum Assist an actual business in developing their international marketing plan. Students, under the supervision of a faculty member, determine a product's foreign marketability. P: 160-585 and consent of instructor.
160-498	1-2 Credits	Business Administration Field Experience Off-campus work and study in an approved position to better understand the challenges of being an effective manager. R FWS	160-598	1-2 Credits	Business Administration Field Experience Off-campus work and study in an approved position to better understand the challenges of being an effective manager. R FWS
160-520	1-3 Credits	Seminar Current topics in business. (<i>Title will reflect specific business content</i>). R FWS	160-601	2 Credits	Legal Environment of Business Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control.
160-535	3 Credits	Entrepreneurship: Small Business Planning Concepts, strategies, and applications involved in entrepreneurship. Profile of entrepreneurs and the risks and rewards, creating products and services for the market place, going into business—start-up, buy out, franchise—legal and financial aspects. Preparing a business plan required. P: 160-206 or 160-200 and 160-330 or consent of instructor. FW	160-638	2 Credits	Industrial Distribution Seminar Culminating and synthesizing experiences in industrial distribution. Individual topics will vary from semester to semester reflecting the latest changes in the field. P: 160-438. \$ S
160-538	3 Credits	International Logistics International logistics strategy: customer service, inventory, transportation, packaging, warehousing, storage, exporting, licensure, joint ventures, ownership documentation, terms of trading, organization, financial and management skills. P: 160-438.	160-649	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
160-540	3 Credits	International Business Finance Applications of concepts of business finance in international setting. Financing of international transactions and multinational corporations. Management of international working capital, financial and tax systems. P: 160-340 or consent of instructor.	160-679	3 Credits	Marketing Research Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. P: 160-330 and a first-level statistics course. FW

160-690 3 Credits

Administrative and Business Policies

Integrates previous business studies, develops ability to solve business problems through scientific approach to decision-making. Students use business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel and public relations functions.

P: 160-330 and 160-340 and 320-210 or 320-201 and senior standing. **FW**

160-697 1 Credit

Field Experience FWS

Manufacturing

181-102 3 Credits

Manufacturing Materials and Processes I

Material properties (*metals, plastics, elastomers, wood and composites*). Experiences in machining and forming processes such as turning, milling, shearing, drawing, electrical discharge machining, injection molding, extrusion, thermoforming laminating, reaction injection molding. New developments and trends in materials and processing. **\$ FW**

181-103 3 Credits

Manufacturing Materials and Processes II

Common materials used to manufacture products; experiences related to producing metal products by welding, forging, casting and powdered metal molding; application of finishing materials; molding products from ceramic materials; and fastening with adhesives and mechanical fasteners. New developments and trends in materials and processing. **P:** 181-102. **FW**

181-105 3 Credits

Basic Robotic and Automated Systems Application

Introduction to broad applications of robotic and automated systems including historical developments, recent innovative uses of robots, vision systems, processing automation, programmable controllers, and computer numerical controlled devices. Tailored to students seeking a broad introduction to automated systems rather than a specialized in-depth technical approach. Will not serve as a prerequisite for 181-505 robotics.

181-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

181-230 3 Credits

Metal Machining Technology

Basic machine tool concepts providing an operational knowledge of the lathe, milling machine, grinder, drill press and electrical discharge machine (*EDM*). Introduction to precision measurement techniques and instruments.

P: 181-102. **FW**

181-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

181-250 2 Credits

Plastics I

Plastics industry materials and processes; characteristics and properties of thermoplastic and thermosetting materials and processing equipment. **FW**

181-280 2 Credits

Packaging Fundamentals

Relationship to marketing and consumer behavior, control through legal and industrial regulations, function within larger organization, roles of professional engineer, packages and their function. **FW**

181-301 2 Credits

Technology, Resources, Environment

Relationship between rate of resource use and environmental degradation; possible consequences of present resource consumption patterns; pursuit of ecologically sound resource consumption patterns more appropriate to presently known available resources. **FW**

181-320 3 Credits

Production Sheet Metal

Forming characteristics of various metal sheets. Conventional and high technology cutting, bending, forming, and joining processes and equipment.

P: 181-102.

181-315 3 Credits

Packaging Materials

Origin, composition, properties and application of packaging materials; lab work in packaging and materials testing methods. **P:** 181-280. **FW**

181-340 3 Credits

Plastics Processing

Injection molding process control, material properties, statistical process control, and basic product and mold design. Basic thermoforming processes and product design; profile, sheet, and film extrusion; blow molding processes; and resin composite materials and molding processes. **P:** 181-102. **\$ FW**

181-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

181-357 3 Credits

Metal Casting Processes

Development of selected metal casting processes through design, pattern construction and casting. Select casting processes for production applications. The role of computers and robots as tools of the casting industry. Visual and metallurgical analysis of castings. **P:** 181-103 or consent of instructor. **FW**

181-365 3 Credits

Production Welding Technology

Fundamental concepts of welding and cutting processes. Set-up and/or operational knowledge of common welding and cutting processes. Metallurgical effects of welding on metals and tests for welds. Operational knowledge of robots in welding, welding codes and symbols.

P: 181-103 or consent of instructor. **FW**

181-380 3 Credits

Consumer Packaging Systems

The study of packaging from the design concept through production. Lab work on structural design, sample making, and machine operation. Discussions on standard packages and their applications. **P: 181-280. FW**

181-381 3 Credits

Distribution Packaging

Packaging systems to support the distribution functions. Topics will include shipping containers, palletizing, unitizing, barrier problems, marking and coding for shipment, freight regulations, military specifications and hazardous materials regulations. **P: 181-280, 181-315, 181-380 FW**

181-385 3 Credits

Packaging Machinery

Equipment that measures, forms, fills, seals, cartons, cases, uncases and labels; functional capabilities of speed, material characteristics, carton size and operating characteristics. **P: 181-280. FW**

181-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

181-480 3 Credits

Packaging Design and Evaluation

Chemical and physical protection problems; materials, structure, graphics and regulations in package design; shock and vibration forces in package evaluation; practical applications of evaluation using electronic instrumentation.

P: 181-380 or 181-381. FW

181-502 3 Credits

Engineering Data Bases for Manufacturing

Classification and coding, and formation of a group technology system. Modification of existing software for computer aided process planning to serve specific needs. information storage and retrieval systems. Development of computer integrated manufacturing data bases. Technical and human factors affecting workers. **P: 181-504 or 150-510 or consent of instructor. FW**

181-504 3 Credits

Computer Aided Manufacturing

Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation.

P: 181-101 or consent of instructor or equivalent programming course. \$ FW

181-505 2 Credits

Robotics

Capabilities of and justification for industrial robots; lab work with robots and simulators in processing, assembly and materials handling.

P: 181-504 and 354-141 or consent of instructor. \$ FW

181-506 3 Credits

Maintenance of Processing Equipment

Recondition, identify and correct common malfunctions of hand and power woodworking and metalworking equipment; manufacturers' performance specifications, cutting tool specifications and preventive maintenance schedules; selection of hand tools, power equipment, measuring instruments and safety devices.

181-508 3 Credits

Industrial Metrology

Measurement of heat, moisture, speed, fluid flow, material properties, and angular and linear dimensions for parts production and process control. Theory and application with major emphasis on dimensional metrology. Introduction to statistical process control and non-destructive testing.

P: 181-102, junior standing or consent of instructor. W

181-510 3 Credits

Manufacturing Systems

Dedicated, flexible and standard manufacturing systems. Selection and application of standard production components and tooling to produce and evaluate a given product. Emphasis on integrated inspection, part transfer, production and robot application. **P: 181-504. \$ FW**

181-515 3 Credits

Metallurgy

Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. **P: 311-115. F**

181-537 1-3 Credits

Numerical Control in Manufacturing

Investigation and justification of numerical control of machine tools; types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting; working knowledge of basic machining processes recommended.

P: 181-102 or 181-504. \$ W

181-540 3 Credits

Design and Simulation of Manufacturing Cells

Applied manufacturing system design and evaluation. Group technology approach. Computer assisted coding and classification. Development of part families. Efficient design of manufacturing cells. Evaluation of manufacturing system designs using simulation and other techniques. Basic statistics and computer programming abilities desirable. **P: 181-504. \$ F**

181-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

181-565 2 Credits

Welding II

Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. **P: 181-365.**

181-580 3 Credits

Packaging Development

Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer. **P:** 181-480. **FW**

181-585 2 Credits

Packaging Seminar

Current packaging problems or developments (*subject based on students' interests and current issues*). **P:** senior standing in Packaging Concentration. **FW**

181-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

181-698 1-2 Credits

Field Experience FWS

Construction

182-130 2 Credits

Hospitality/Living/Institutional Facility Planning

Basic architectural drafting and design content, concepts, media, techniques, and methods to record and communicate ideas and solve problems. **\$ FWS**

182-131 2-3 Credits

Architectural Graphics

Architectural drafting with emphasis on drawing theory and delineation. Drawing media and equipment are utilized in solving problems relating to construction that are normally solved graphically. If taken for three credits, computer aided drafting will be included in the course work. **\$ FW**

182-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-170 2 Credits

Light Construction Methods

Residential and small commercial structure construction: terminology, materials, tools and equipment. **FW**

182-175 2 Credits

Construction Materials

A study of the origin, composition, and basic nature of primary materials of construction (*woods, metals, plastics, brick, tile, rock, stone, cement, and glass*). Secondly, the selection, specifying, and recommended application procedures of materials with respect to standards and codes. **FW**

182-190 1 Credit

Orientation to Construction Industry

An introduction to the field of construction as presented by professionals in the construction industry to broaden student understanding and develop appreciation of the entire scope of construction. **W**

182-233 3 Credits

Architectural Design I

Develop graphic simulation techniques and problem-solving abilities; site planning, space requirements, housing codes, structure, light frame construction, solar and earth integrated designs, mechanical and electrical systems.

P: 183-110 or 182-130 or 182-131 or consent of instructor. **FWS**

182-237 3 Credits

Architectural Technology

Space programming and planning, working drawings for commercial and industrial buildings. Building codes, energy requirements, construction contract documents, structural materials and systems, building materials and systems. **P:** 130-110 or 130-120. **FW**

182-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-270 3 Credits

Heavy Construction Methods and Equipment

Introduction to commercial and industrial building systems: equipment, site preparations, footings, foundations, formwork, concrete, steel and wood timber techniques. **P:** 182-170. **FW**

182-273 3 Credits

Concrete Technology

The principles of cement and concrete (*ingredients, mixing, placement, finishing, curing, properties and applications*). **P:** 182-170. **FW**

182-335 3 Credits

Architectural Design II

Programming and analysis, design solution, presentation and design development drawings for commercial and/or public buildings; scale, site, codes, energy, acoustics, structure and their relation to form. **F**

182-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-357 2 Credits

Site Engineering

Use of surveying instruments, techniques and computation to measure and describe land configurations; construction surveying including contours, grades, cut and fill, and drainage; soil analysis. **P:** 183-110 and trigonometry. **\$ FW**

182-375 3 Credits

Wood and Wood Fiber Composite Materials

Wood structure, classification, composition, extractives, properties, testing, stabilization, bonding, preservation, wood/plastic composites, paper and other modified wood fiber materials. **P:** 181-102 or consent of instructor. **W**

182-424 3 Credits

Architectural Technology

Space programming and planning, working drawings for commercial and industrial buildings. Building codes, energy requirements, construction contract documents, structural materials and systems, building materials and systems. **P:** 183-110 or 182-120. **FW**

182-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-538 3 Credits

Contract Requirements and Specifications

Principles of contract requirements and construction specification organization. Development of basic skills of project manual preparation. Demonstration of role of specifications within the construction process and relationship to other construction contract documents. **P:** 326-320 or 326-515. **FW**

182-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-552 3 Credits

Environmental Systems HVAC

Principles of heating, ventilating and air conditioning; analysis and selection of systems and equipment. **P:** 372-232 or 372-242 or 372-282. **W**

182-553 3 Credits

Environmental Systems - Plumbing and Electrical

Plumbing, electrical and illumination systems for light and heavy construction. **P:** 372-232 or 372-242 or 372-282. **FW**

182-558 3 Credits

Structural Systems - Wood and Steel

Analysis, selection, and delineation of wood and steel structural components and systems in buildings. **P:** 372-321. **FW**

182-559 3 Credits

Structural Systems - Concrete and Masonry

Analysis, selection, and delineation of concrete and masonry structural components and systems in buildings. **P:** 182-558. **FW**

182-570 3 Credits

Construction Estimating I

Estimating and analyzing material, man-hours, equipment, methods of construction, overhead and profit, and submitting these factors in the form of a bid.

P: junior standing. **F**

182-571 2 Credits

Construction Estimating II

Computer-based estimating systems for construction. Take-off, pricing, bid preparation, resource and cost studies, and database operations.

P: 182-570. **FW**

182-572 3 Credits

Management of Construction

Organizing, managing and operating the contracting firm. **P:** 160-304. **FW**

182-575 2-4 Credits

Construction Practicum

Technical information, construction problems and actual development of light residential structure. **S**

182-595 1-2 Credits

Seminar

(Title will reflect specific construction content). Current and projected methods, concepts, technologies, and innovations in construction. **R S**

182-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

182-670 3 Credits

Project Scheduling and Cost Control

Total concept of construction industry: contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques.

P: 150-570. **FW**

Design, Research and Development

183-110 2 Credits

Drafting

Projection concepts for representing Three-dimensional forms on two-dimensional surfaces; shape and size description and drafting techniques.

\$ FW

183-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

183-205 3 Credits

Design for Industry

Industrial research and development experiences focusing on problems related to product development, innovation and problem solving, manual, semi-automatic and automatic production processes. Development and application of various systems for selection of materials and processing will be studied. **FW**

183-212 3 Credits

Descriptive Geometry

Graphic representation and solution of space problems involving points, lines, planes, intersections, revolutions and vectors. **P:** 183-110. **F**

183-234 2 Credits

Computer-Assisted Design and Drafting

PC-based CADD; solve problems with the assistance of computer hardware and software. Generate drawings for architectural and mechanical design applications. **P:** 183-110 or 182-131 or 182-130 or consent of instructor. **FWS**

- 183-249 1-8 Credits
Cooperative Education Experience
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ R FWS
- 183-290 3 Credits
Mechanics of Solids I
 Technical calculations, dimensional analysis, freebody diagrams, force systems and equilibrium, friction, elementary statically determinate framed structures, and simple stress. **P:** 372-231 or 372-241 or 372-281. **FW**
- 183-291 3 Credits
Mechanics of Solids II
 Stress and strain, torsion, bending of beams, compound stress, principal stress, deflection of beams, statically indeterminate members and columns.
P: 183-290 or 372-531. **FW**
- 183-311 3 Credits
Technical Drafting
 Drafting concepts and techniques in manufacturing industries; graphic language of orthographic projection for use in design, assembly, manufacturing and sales. **P:** 183-110. \$ FWS
- 183-349 1-8 Credits
Cooperative Education Experience
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ R FWS
- 183-414 1-3 Credits
Technical Illustration
 The presentation of a highly organized approach to learning technical pictorial drawings. Emphasis is on isometric views, inking techniques, and preparation of original art to final product. **P:** 183-212. **W**
- 183-449 1-8 Credits
Cooperative Education Experience
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ R FWS
- 183-520 3 Credits
Prototype Development and Model Making
 Introduction to model making and prototype development/construction. Competencies are developed in converting design, research and development, and other creative ideas into three-dimensional objects using traditional and non-traditional machining and forming techniques. Three-dimensional design problems form the core of this course. **P:** 181-102. \$
- 183-532 4 Credits
Mechanical Design
 Analysis and design of machine elements: gearing bearings, shafting and friction devices. **P:** 183-291 or 372-325, 183-592 or 372-533, 183-593. **F**
- 183-537 2 Credits
Mechanical Design Drafting
 Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings. **P:** 183-311, 183-532 or concurrent registration. **W**
- 183-549 1-8 Credits
Cooperative Education Experience
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ R FWS
- 183-592 3 Credits
Mechanics of Machinery I
 Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration.
P: 183-290 or 372-531, 355-153. **W**
- 183-593 3 Credits
Mechanics of Machinery II
 Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces. **P:** 183-290 or 372-531. **F**
- 183-595 1-2 Credits
Seminar
(Title will reflect specific design, research and development content). Current and projected communication methods, concepts, technologies and innovations in design, research and development. **R S**
- 183-620 2 Credits
Research and Development
 Research and development procedures applied to specific industrial material and processing problems. **P:** senior or graduate standing. **FW**
- 183-621 1 Credit
Research and Development Laboratory
 This lab is taken in conjunction with 170-620 to allow students in technical majors to fulfill the requirements of the major research and design project.
P: senior or graduate standing. To be taken concurrently with 170-620. **FW**
- 183-636 2 Credits
Computer Assisted Design Problems
 Advanced CADD applications. Construct three-dimensional wireframe drawings. Perform finite element analysis on select components. Customize software for specific applications. in-depth analysis of CADD applications in mechanical and architectural design. **P:** consent of instructor. **F**
- 183-649 1-8 Credits
Cooperative Education Experience
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ R FWS

Electricity/Electronics

184-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

184-204 3 Credits

Electricity/Electronics Fundamentals

Electricity/electronics, associated phenomena related to basic electrical and electronics systems. Examines devices, operation, application, theory from power devices to electronic devices, controls to microprocessors.

P: college-level mathematics capability. FW

184-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

184-270 4 Credits

Circuit Analysis

Introductory concepts and analysis techniques in DC and AC circuit analysis including current, voltage, resistance, capacitance, inductance, impedance, loop and node equations, transients, network theorems, real, reactive, and apparent power in AC circuits.

P: 355-153 or 355-156, 372-221 for Industrial Technology; 355-156 (372-271 corequisite) for Applied Technology. FW

184-280 4 Credits

Networks

Networks based on differential equations. Classical and Laplace transform solution of network equations, complex impedance, introduction to state variable theory, two-port parameters. Frequency response techniques including Fourier series and Fourier transforms. P: 355-255, 110-270. F

184-344 2 Credits

Electric Power and Distribution

Single and polyphase residential, commercial, industrial wiring systems, codes and standards. P: 184-204.

184-348 2 Credits

Motors and Generators

Rotating machinery concepts; DC generators, motors; synchronous motors, generators; induction motors; controls. P: 184-204. W

184-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

184-371 3 Credits

Solid State Electronics

Basic semiconductor theory for solid state devices including diodes and transistors. Biasing and small signal analysis of transistor amplifiers. Introduction to operational amplifiers and integrated circuit terminology. P: 184-270. F

184-376 2 Credits

Electronics Fabrication Laboratory

Overview of thick-film/thin-film microelectronics fabrication, design and application. Printed circuit-board design and fabrication, and principles of soldering. P: 184-371. \$ F

184-381 3 Credits

Linear Electronic Circuits

Analysis of integrated and discrete transistor circuits including common transistor arrays, analog signal processing using operational amplifiers, negative feedback amplifiers, high and low frequency response, low frequency response, low frequency class A and B power amplifiers and electronic voltage regulator circuits. P: 184-371. \$ W

184-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

184-473 3 Credits

Digital Logic and Switching

Analysis and synthesis of combinational and sequential switching circuits. Boolean algebras and number systems, switching functions, minimization, single and multiple output networks, realization of functions. Finite state sequential machines, state transition diagrams, machines and state equivalence, incompletely specified machines, machine realization. Algorithmic state machines and asynchronous state machines. P: 184-371. F

184-474 3 Credits

Digital Electronics

Junction and field effect transistors as switches, basic digital and switching circuits, bipolar and MOSFET logic families, digital integrated circuit schemes and building blocks, multivibrators, memory elements, digital to analog and analog to digital converters. P: 184-371, 184-473. \$ W

184-482 3 Credits

Electronic Communication Fundamentals

Investigation of amplitude modulation, frequency modulation, single-side band and pulse modulation electronic communication systems. Theory of modulation and demodulation, noise and a study of transmitter and receiver configurations. P: 354-331, 110-381. \$ F

184-542 3 Credits

Computer Applications in Electronics

Microprocessor application at a system level. Use of hardware and software design aids such as assemblers, text editors, compilers, read only memory emulators and system projects related to specific microprocessors. Introduction to the 16-bit microprocessors, 8-bit slice processors, signal processors and controllers. P: 184-575. W

184-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

184-551 3 Credits

Introduction to Microprocessors

The examination of the working components of a simple microprocessor system, machine language programming, registers, memory, input-output and application such as security, energy monitor, control, communication, and transportation. **P:** 300-101 and basic electronic background or equivalent. **FW**

184-552 3 Credits

Electronic Communications

Electrical/electronic communication systems; modulation, demodulation, r.f. and i.f. amplifiers, alignment, antennas, composite TV signal, receivers, transmitters. **P:** 184-204. **W**

184-553 3 Credits

Instrumentation and Control

Industrial measurement, control, open loop, closed loop, analog, digital, electric/electronic, fluidic, mechanical, pneumatic. **P:** 184-371. **W**

184-555 3 Credits

Electronic System Applications

Electrical control, interfacing, signal conversion, sensor operation, feedback and electrical power devices as they are used in common applications of manufacturing, construction, transportation and communication systems.

P: 184-204. **\$ W**

184-574 3 Credits

Microprocessor Fundamentals

Overview of present day microprocessor technology: function, analysis and operation of selected microprocessors. Memory, input/output interfacing devices. Basic machine/assembly and structured language programming and hardware application. **P:** 184-371. **FW**

184-575 3 Credits

Microprocessor Interfacing

Interfacing principles of microprocessor based microcomputer systems. Input/output techniques, input/output mapping, asynchronous/synchronous communication, parallel/serial conversion. Microprocessor application such as control systems, energy monitor, cooking and communications. **P:** 184-574. **F**

184-583 4 Credits

Fundamentals of Control

Analysis of elementary control systems via classical and Laplace transform techniques, frequency response and root locus plots, block diagrams and transfer functions, open and closed loop systems, stability considerations, digital to analog conversion, microprocessor-based control systems.

P: 184-280, 184-574. **\$ F**

184-586 3 Credits

Instrumentation

Descriptive and analysis of thermal, mechanical, acoustic, optical, pneumatic and electromagnetic sensors, measuring systems, calibration, performance of measuring systems, analog and digital signal conditioning. Measurement of frequency and time and analysis and performance of display units. **P:** 184-583. **W**

184-595 1-2 Credits

Seminar

Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. **R S**

184-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

184-689 4 Credits

Development Practicum

Project research and design, specification control drawing documentation. Project construction and a technical paper presentation.

P: advanced standing. **\$**

Power

185-103 2 Credits

Power Mechanics

Internal and external combustion heat engines, mechanical and fluid transmission systems; present and future applications and limitations. Laboratory work emphasized. **\$ FW**

185-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

185-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

185-260 2 Credits

Introduction to Fluid Power

Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. **FW**

185-303 3 Credits

Mechanical Power Transmission

Fundamentals of mechanical power transmission: theory of operation, selection of components, suggestions for application, and analysis of systems. **W**

185-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

185-361 2 Credits

Industrial Hydraulics

Theory, operation and construction of hydraulic systems and circuits; pumps, reservoirs, lines, control valves and actuators. **P:** 185-260. **F**

185-362	2 Credits	Industrial Pneumatics Theory, operation and construction of pneumatic and pneumatic/hydraulic system components, with application to basic industrial circuits, compressors, plumbing, control valves and actuators. P: 185-260. F
185-449	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
185-549	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
185-595	1-2 Credits	Seminar Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. R S
185-649	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
Transportation/Energy		
186-149	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
186-210	2 Credits	Introduction to Automotive Technology Consumer knowledge on automobile chassis, internal combustion engine components, fuels, ignition, suspension, and drive systems including service and adjustment techniques.
186-249	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
186-349	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
186-449	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
186-501	2 Credits	Transportation Needs, preparation, methods, destination and control of transportation as it relates to society and industry. \$ FW
186-504	3 Credits	Energy Technology Energy sources and power applications. Economical, political and environmental ramifications. Conversion, storage, control, instrumentation, transmission and utilization. \$ FW
186-549	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS
186-557	3 Credits	Principles of Technology I Contemporary applications of the principles governing force, work, rate, resistance, energy, power, and force transformers in mechanical, electrical, fluid and thermal systems. Technical content especially appropriate for educational applications. P: 372-231 or equivalent.
186-595	1-2 Credits	Seminar Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. R FWS
186-631	3 Credits	Private Pilot's Ground School Preparation for F.A.A. Private Pilot's Certificate: airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general aircraft operation and flight theory. FW
186-635	2 Credits	Introduction to Flight Flying a single-engine aircraft: applied flight theory, dual flight instruction and solo flight. P: 186-631.
186-649	1-8 Credits	Cooperative Education Experience Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ R FWS

Industrial Teacher Education

190-149 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

190-160 2 Credits

Introduction to Technology Education

An introduction to current programs, facilities and opportunities in teaching industrial arts, vocational, technical and adult education. Students develop personal goals, complete program plan sheets, visit schools and work as teacher aides. **FW**

190-205 2 Credits

Teaching Methods Technology/Vocational Education

Study of teaching methods in use in youth and adult shop classes. Instruction planning; lesson presentation with videotape equipment; methods of organization and management; instruction aids; professional ethics. P: 190-160. **FWS**

190-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

190-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

190-390 2 Credits

Lab/Class Management in Technology Education

An overview of principles of facility planning and equipment selection for a variety of curriculum needs. Laboratory and classroom management techniques will be presented with an emphasis on safety requirements and managing various delivery systems used in contemporary programs. P: 190-160. **FWS**

190-398 1-2 Credits

Field Experience FWS

190-398E 1 Credit

Field Experience FWS

190-405 2 Credits

Curriculum Technology/Vocational Education

Study of curriculum terminology and methods of selecting and organizing content for industrial education courses. a course of study and individualized instruction will be developed by the student for use in teaching a class in industrial arts or vocational education. P: 190-160 and 190-205. **FWS**

190-406 2 Credits

Evaluation in Technology/Vocational Education

For industrial arts and vocational/technical teachers in evaluating program and student performance: basis for student assessment, evaluation of manipulative activity and construction of teacher-made tests as applied to all students (including those with special needs). Student evaluation of instructor and instruction.

P: 190-205 and 190-404. **FWS**

190-407 5 Credits

Student Teaching in Technology Education

Directed teaching and community experiences in selected off-campus schools.

P: must hold teaching certificate in an area other than Industrial Education.

190-408 8 Credits

Student Teaching Technology/Vocational Education

Directed teaching and community experiences in selected off-campus schools.

P: 190-404 and overall G.P.A. of 2.25; satisfactory health, speech and English. **FW**

190-409 6 Credits

Student Teaching

Directed teaching and community experiences in selected off-campus schools.

P: 190-160, 190-205, 190-405, 190-406, satisfactory health and speech, English, and grade point average. **FWS**

190-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ R FWS

190-488 8 Credits

Internship Teaching

An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. P: 190-404. **FW**

190-489 6 Credits

Internship Teaching

An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. P: admission to student teaching. **FW**

190-498 1-2 Credits

Field Experience FWS

190-498E 1 Credit

Field Experience FWS

190-525 2 Credits

Technology for Elementary School Children

Development, philosophy, objectives and course organization for industrial arts for the elementary schools. Suitable laboratory work in woods, metals, plastics and drawing. **WS**

190-530 3 Credits

Implementing Technology Education

Converts the theory of contemporary technology education programs into instructional materials, facilities, and strategy suited to the secondary and post-secondary school. **FWS**

190-540 2 Credits

Middle School Technology Education

Reviews trends and activities in the technology education movement. To update instructors to teach middle school offerings. **FWS**

190-549 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

190-570 1-2 Credits

Elements of Instruction

Techniques in the Madeline Hunter method of researched topics of instruction. Teaching to an objective, selecting objectives at the correct level of difficulty, monitor and adjust, and principles of learning including motivation, retention, transfer, set, active participation, reinforcement and closure. **FWS**

190-575 1-3 Credits

Workshop

Current specialized topics in industrial education through experiential activities. **P:** consent of instructor.

190-598 1-2 Credits

Field Experience FWS

190-631 1-3 Credits

Field Trips to Industry

Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught. **\$ R S**

190-637 2 Credits

Organization/Management of Technical Laboratories

Experience in administration, project development and teaching problems associated with industrial education. **P:** 190-205. **S**

190-638 2 Credits

Course Construction

Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package and/or unit of instruction. **WS**

190-649 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ R FWS**

Technology

195-230 2 Credits

Exploring Technology

Aspects of technology: definitions, present characteristics, history, forecasting, transfer, assessment, impact and systems. **FWS GETECH**

195-520 2 Credits

Technological Advances – Fast Forward I

Outlines industry's rapid advancements in high technology as utilized in the world today. Reference is made to a variety of applications of this technology now and in the future. **FS GETECH**

195-521 2 Credits

Technological Advances – Fast Forward II

Current applications of technology in today's society. Discusses how technological advances have affected educators through simulation, society through technological changes such as storing information, television communication and other new technological advances. **WS GETECH**

195-532 2 Credits

Futures of Technology

Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer. **F GETECH**

195-540 1-2 Credits

Future of Work

Future possibilities as to why people work, who will work, and in what conditions. Project probable work parameters from current trends. Relate past, present and future to students' individual work situations. **FW**

Marketing Education

196-201 3 Credits

Introduction to Marketing Education

The field of distributive education; historical development, role in vocational education, career opportunities, certification requirements and current trends. **FW**

196-202 3 Credits

Supervision of Distributive Education Clubs

Organization of a DECA chapter, the administration of activities, and the design of competitive events, including "program of work" development, school and model store organization, and integration of DECA into the curriculum. **FW**

196-301 4 Credits

Marketing Education Methods

Methods and materials of distributive education: projects, individualized instruction, programmed instruction, demonstration, instructional resource materials and laboratory equipment. **F**

196-401 3 Credits

Marketing Education Curriculum

Developing distributive education curriculum for secondary and post-secondary programs. **F**

196-408 8 Credits

Marketing Education Student Teaching

Directed teaching and community experiences in selected off-campus schools (quarter). **S**

196-409 6 Credits

Marketing Education – Student Teaching

Directed teaching and community experiences in selected off-campus schools. **P:** 196-201, 196-202, 196-301, 196-401, 196-501, senior standing–cumulative grade point average of 2.5; consent of instructor; satisfactory health, speech and English. **W**

196-488 8-6 Credits
Marketing Education - Internship
 Directed teaching and community experiences in selected off-campus schools.
P: admission to student teaching. **FW**

196-501 3 Credits
Marketing Education Project Method
 Designed to develop methods, techniques, questions, activities and resources that center around teaching distributive education via the project method or model store simulation. **F**

196-555 2-3 Credits
Marketing Education Seminar
 Designed to update marketing and distributive education undergraduates and graduates (*teacher-coordinators*) on work experience, new curriculum, student organization competencies, coordination techniques, special needs, and distributive education related projects. Will be used to in-service high school teacher-coordinators and vocational, technical and adult education marketing teachers. **W**

Training and Human Resource Development

198-549 1-8 Credits
Cooperative Education/Internship
 Work and study in an approved training department in business, industry or government. May be recurring, is supervised during work/study periods. Any recurring work/study periods would be designed to build upon previous experiences in the course.
P: consent of instructor and completion of at least three training courses. **\$ R FWS**

198-550 2 Credits
Introduction to Industrial Training
 Philosophy, career opportunities, status of training programs, curriculum and program development, methods and evaluation, overview of facilities. **FWS**

198-560 3 Credits
Training Systems in Business and Industry
 Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors. **S**

198-570 2 Credits
Training Methods in Business and Industry
 Identification of training situations where the development and delivery of training is needed. Emphasis is on methods to deliver a training session. Students will be required to make training session presentations. **FWS**

198-575 1-3 Credits
Workshop
 Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R S**

198-589 2-8 Credits
Training Internship
 Opportunities for students to learn and practice training management and instructional techniques through activities and experiences in a training department. Objectives commensurate with student's background and field of training. Activities include designing and implementing training programs in student's major or minor field of study in either industry, business, military or government training programs. **P:** 198-550 or 198-560, grade point average of 2.5; consent of specialization director. **FWS**

198-600 1-3 Credits
Workshop
 Special topics in training and human resource development providing hands-on or experiential learning activities. Specific content and title to reflect topic of the workshop. **R FWS**

Vocational Education

199-198 1-2 Credits
Field Experience FWS

199-298 1-2 Credits
Field Experience FWS

199-398 1-2 Credits
Field Experience FWS

199-488 1-8 Credits
Vocational, Technical and Adult Education Internship
 International students majoring in Vocational, Technical and Adult Education will participate in an internship located in both industrial/business and vocational/technical institutions to have experience in their technical specialty.
P: 190-205, 190-405, 190-406, 199-502, 199-534. **FWS**

199-498 1-2 Credits
Field Experience FWS

199-501 1 Credit
Preservice Workshop for Vocational Educators
 Introduction to the basic concepts of teaching courses in Wisconsin vocational, technical and adult education. **S**

199-502 2 Credits
Principles of Vocational, Technical and Adult Education
 Philosophy, organization and administration of vocational, technical and adult education, nationwide, in Wisconsin and on the local level. **\$ FWS**

199-534 2 Credits
Task Analysis
 Analysis techniques utilized in curriculum development. Emphasis on task analysis and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs. **FWS**

199-537 2 Credits
Competency Based Education - Vocational/Industrial
 Competencies for Vocational, Technical and Adult Education programs and courses. Development of competency-based education performance indicators in all domains, a competency-based education management system, and basis for competency-based education evaluation. **FW**

199-546 1-3 Credits
Seminar
 Current topics in vocational, technical and adult education with application for personnel in the field. **P:** consent of instructor. **S**

199-546D 2 Credits
Seminar: Sex Equity in Vocational Education
 Part four of the eight-day workshop for sex equity project. **R FS**

199-546E 1-3 Credits

Seminar

Current topics in vocational, technical and adult education with application for personnel in the field. **P:** consent of instructor. **WS**

199-559 4 Credits

Technology Impacts Occupational Programs

Presentation of latest technology in communications, manufacturing, construction, and/or transportation which involves concepts from math, science and computer science. **R S**

199-560 2 Credits

Cooperative Occupational Education Programs

Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. **FWS**

199-575 1-3 Credits

Workshop

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R FWS**

199-575A 1-3 Credits

Workshop

Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R FWS**

199-580 2 Credits

Computer Aided Instruction – Vocational, Technical and Adult Education

Applications of the computer in managing vocational, technical and adult education classrooms and laboratories. Utilization of computers in course preparation, evaluation and methods of teaching. Use of existing software and the evaluation of it. **P:** consent of instructor or computer literacy course. **S**

199-597 1 Credit

Field Experience FWS

199-598 1-2 Credits

Field Experience FWS

199-605 2 Credits

Methods of Teaching Vocational Education

Competency-based and individualized approach to methods of teaching vocational education. **FWS**

199-638 2 Credits

Course Construction for Vocational Educators

Competency-based and individualized approach to principles of course construction for vocational educators. **FWS**

199-640 2 Credits

Instructional Evaluation in Vocational Education

Competency-based and individualized approach to instructional evaluation for vocational educators. **FS**

199-674 2 Credits

Adult Education

Philosophy and history of adult education in the United States. Techniques for teaching adults: psychological factors, methods, adult interests and characteristics. **\$ FW**

199-698 1-2 Credits

Field Experience FWS

Interdepartmental – Home Economics

200-295 1 Credit

Career Exploration in Home Economics

Career expectations and developmental needs of individuals and organizations/institutions in home economics. **FWS**

200-449 1-6 Credits

Cooperative Education Program in Home Economics

Work and study in an approved business/industry position related to the student's major. Selection by application and interview.

P: consent of instructor or field experience. **\$ R FWS**

200-681A 1-2 Credits

Problems in Home Economics

Course will deal with special problems in depth as initiated by an instructor according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. **P:** consent of instructor.

Human Development and Family Living

212-100 1 Credit

Introduction to Early Childhood Programs

History, types of programs and staff requirements in early childhood professions. **FW**

212-101 1 Credit

Introduction to Child Development and Family Life

Fields of child development and family relationships as an intrinsic part of home economics; occupational opportunities in programs serving families and children. **FW**

212-124 4 Credits

Child Development I

The study of growth and development in the young child ages prenatal through late childhood. **FW**

212-160 1-2 Credits

Children's Health and Safety

Providing for young children's health and safety. **FW**

212-235 1 Credit

Child Development Laboratory

Observation and/or participation in early childhood program.

P: 212-124. **R FW**

212-250 3 Credits

Individual and Family Relations

Dynamics of social-psychological forces affecting family interaction. Explorations of courtship, husband-wife, parent-child relationships. **FW ES-C**

212-251	1 Credit	Early Years of Marriage Presentation and evaluation of adjustments, goals and processes of the early years of marriage. FWS	212-401	1 Credit	Issues in Child Development and Family Life Issues related to profession in the areas of child development and family studies. P: enrollment in Human Development and Family Studies program. F
212-264	2-3 Credits	Child Guidance Principles of child guidance; evaluation of literature and application of studies to children; observation of young children. FW	212-430	2 Credits	Human Development: Aging Person Survey of the field of gerontology focusing on what it means to grow old in the United States from a systemic perspective. Multicultural attitudes toward aging; the psychological, physical, social and economic needs and problems of the older population are addressed. Consideration will be given to the personal, familial, environmental and social resources of the older population. P: 212-130 or 212-250 or consent of instructor. FW
212-265	1 Credit	Child Guidance Practicum Supervised participation in Child and Family Study Center or similar center: guidance techniques and understanding of children. P: 212-264. FWS	212-433	3 Credits	Language Arts/Reading - Early Childhood Education Current philosophies, methodology and materials for teaching reading: readiness activities and beginning reading in early childhood. FW
212-274	2 Credits	Creative Activities for Young Children Curriculum, methods and materials for music, art and creative movement activities for young children. P: 212-124 or 212-264. FWS	212-480A	4 Credits	Student Teaching in Preschool Programs Directed teaching and community experience in selected early childhood centers. FW
212-294	5 Credits	Teaching/Learning Strategies in Early Childhood Program management, classroom arrangement, guidance principles, sensory stimulation, enhancement of self and creative expression with young children. P: 212-124 and 212-264. FWS	212-480B	4 Credits	Student Teaching in Kindergarten Directed teaching and community experience in selected kindergartens. P: 212-303. FW
212-344	4 Credits	Science, Mathematics and Social Studies - Early Childhood Education Directed study of application of skills for teaching mathematics and science concepts to young children: organization and presentation of teaching/learning experiences for children in early learning situations. FW	212-488	6 Credits	Intern Teaching An alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one full semester.
212-350	3 Credits	Dynamics of Family Development A study of the family with emphasis on environmental factors significant in marriage and family relationships. P: 212-250. FW ES-B	212-490	.5 Credits	Clinical Seminar in Preschool Programs Seminar concurrent with student teaching in the Child and Family Study Center or other preschool program. FW
212-351	1 Credit	Death and the Family Current literature concerning how families deal with the death of a member; how adults can help children cope with death in the family; how other family members deal with death of older and younger family members. FW	212-491	.5 Credits	Clinical Seminar in Kindergarten Education Seminar concurrent with student teaching in kindergarten. FW
212-354	3 Credits	Skill Training for Individual/Family Interventions Concepts and skills in developing rapport, assessing goals and initiating change with children, parents, couples and families across the lifespan in professional settings. FW	212-492	8 Credits	Student Teaching in Prekindergarten Full-day student teaching experience at the prekindergarten level in a preschool setting, together with a weekly one-hour student teaching seminar session. The student teaching experience follows the calendar of the preschool. Not available to students who have taken 212-480A and/or 212-490. P: 212-294, 212-344, 212-433, 212-685; a major studies grade point average of 2.75 and acceptance in "advanced standing" in the Early Childhood Education program. FW
212-355	3 Credits	Lifespan Human Development Lifespan individual development. Critical examination of influences on individual development across the lifespan. FW GES/BSCI PSYC ES-C			
212-357	3 Credits	Lifespan Sexuality Introduction to human sexuality over the lifespan, utilizing individual and family perspective. Focus is development of sexual behavior, relationships, and gender characteristics from infancy to late life. FW GEH/PE HLTH			

212-493	8 Credits	Student Teaching in Kindergarten Full-day student teaching experience at the kindergarten level in a public school setting, together with a weekly one-hour student teaching seminar session. The student teaching experience follows the calendar of the public school district. P: 212-294, 212-344, 212-433, 212-685; major studies grade point average of 2.75 and acceptance into "advanced standing" in the Early Childhood Education program. FW	212-540	1 Credit	Family Caregiving to Dependent Elders Unique challenges confronting adult children who provide care to aging parents. Government, agency, workplace and family policies and practices promoting and/or undermining family strengths and well-being. FWS
212-494	8 Credits	Student Teaching: Primary Full-day student teaching experience at the primary level (<i>grades 1-3</i>) in an elementary school setting, together with a weekly one-hour student teaching seminar session. The student teaching experience follows the calendar of the school district. P: acceptance into student teaching in the Early Childhood Education program. FW	212-544	4 Credits	Primary Curriculum: Science, Math, Social Studies Curriculum planning for the primary levels of instruction, with particular emphasis on patterns of instructional organization and the planning, implementing and evaluating of sound science, mathematics and social science curricula. P: 212-344 and senior standing or consent of instructor. FWS
212-507	2 Credits	Parent Education/Involvement Parent groups: training of leaders, survey of literature. Practicum with parent groups. P: 212-264. FW	212-545	2 Credits	Exceptional Needs and Programming - Early Childhood Program development and implementation for preschool mentally handicapped children. P: consent of department chair. FWS
212-520	2 Credits	Theories of Early Childhood Education Early childhood education: evolution, theories and principles of current programs, and development of individual philosophy. FW	212-553	1 Credit	Dual Career Families The dual career marriage as a form of family life; benefits and problems encountered. FWS
212-524	3 Credits	Child Development II Empirical study of physical, intellectual, social and emotional development of children. P: 212-124 and 212-264. FW	212-554	1 Credit	The Single-Parent Family Description, statistical trends and problems of single-parent families. FW
212-525	2 Credits	Divorced, Single Parent and Remarried Family Trends and issues in divorce, single parenting and remarriage related to effects on adults, children and society. FWS	212-585	3 Credits	Family Based Employee Assistance Programs Structures and functions of employee assistance programs with employees and their families being the primary unit of analysis and service. P: consent of instructor and junior standing. F
212-530	3 Credits	Adulthood and the Family Study of adults in the family context during the early and middle years. P: 212-124. FW	212-590	3 Credits	Family Research and Methodology Analysis of family theory, research methodology, and selected topics in family relations. P: 212-250 and 212-350. FW
212-531	1-2 Credits	Hospice Clinical Experience Work with an area hospice organization under the supervision of the hospice consultant or patient care coordinator. P: 212-351 or consent of instructor. FW	212-594	2 Credits	Infant-Toddler Programming Practical and theoretical issues relating to the development of programming for infants and toddlers, including infant-toddler development, curriculum development, working with parents, and program evaluation. P: 212-124 and 212-160 or consent of instructor. FW
212-533	2 Credits	Language Arts in Early Childhood Education Early childhood education language arts teaching methodologies, emphasizing the development of young children's skills in listening, writing and speaking. FW	212-595	1-2 Credits	Special Topics in Human Development Special topics in human development. P: junior standing. R FWS
212-535	2 Credits	Seminar On Self-Growth Theories of the self; exploration of aspects of self-development and actualization. P: 212-350 or 212-524. FW	212-601	3 Credits	Child and Family Law Legal issues affecting children and families. P: 212-250, 212-350 and junior standing. FW
			212-605	2 Credits	Family Health Care: Issues and Dilemmas A descriptive review of four health-care issues facing the american family with special emphasis on the impacts of advanced technology in health-care. P: junior standing or consent of instructor. FW

212-607	2 Credits	Parent Counseling Approaches and techniques for working with parents; observation and experience in childrearing problems parents face. P: 212-124 and 212-264. W	212-650	3 Credits	Introduction to Marriage and Family Therapy Conceptual frameworks and approaches to marriage and family counseling. P: consent of instructor. F
212-610	3 Credits	Family Impact Seminar Content, methods and process of assessing impact of public policy on children and families. P: 212-250, 212-350, 375-510 or consent of instructor. FW	212-651	3 Credits	Marriage and Family Therapy Seminar Application of basic counseling techniques in premarital, marital, family and couples-group counseling; supervised by professional marriage and family counselor. P: 212-650 or consent of instructor. W
212-615	1 Credit	Family Stress, Coping and Adaptation Impact of family development and stress on individual and family well-being. P: 212-250. FWS	212-653	2 Credits	Relationship Communication Training Communication theories and skills applied to marital, family and other intimate relationships. Application of communication skills to personal relationships and professional work. (<i>Preferably, but not necessarily, have your premarital or marital partner with you</i>). P: consent of instructor. F
212-624	3 Credits	Advanced Child Study A study of principles and review of literature pertaining to children. P: 212-124 and 212-264.	212-654	2 Credits	The Workplace and the Family Linkages between families and workplace; corresponding consequences for individual family well-being and the workplace. P: 212-124 and 212-250 or consent of instructor. FWS ES-C
212-626	1-3 Credits	Special Topics in the Study of Family Life Family life programs and literature; individual study of problems of personal or professional interest. P: 212-350 or consent of instructor. R FWS	212-660	1 Credit	Current Topics in Sexuality Overview and evaluation of current research concerning human sexual behavior and attitudes. P: 212-250. FWS
212-626A	1-3 Credits	Special Topics in the Study of Family Life Family life programs and literature; individual study of problems of personal or professional interest. P: 212-350. R FWS	212-662	1 Credit	Early Childhood Education Program Models Exploration and analysis of contemporary early childhood education program models and practices in various settings. P: senior standing. FW
212-626B	1-3 Credits	Special Topics in the Study of Family Life Family life programs and literature; individual study of problems of personal or professional interest. P: 212-350 or consent of instructor. R FWS	212-664	1-3 Credits	Special Topics in Early Childhood Curriculum Philosophy and methodology of early childhood education: problems confronting teachers. P: 212-303. R FS
212-626C	1-3 Credits	Special Topics in the Study of Family Life Family life programs and literature; individual study of problems of personal or professional interest. P: 212-350 or consent of instructor. R FWS	212-664A	1-3 Credits	Special Topics in Early Childhood Curriculum Philosophy and methodology of early childhood education: problems confronting teachers. R FWS
212-637	2 Credits	Seminar in Child Development Special problems and aspects in child development; preference given to students' interests. P: consent of instructor. FW	212-664B	1-3 Credits	Special Topics in Early Childhood Curriculum Philosophy and methodology of early childhood education: problems confronting teachers. R FWS
212-638	2 Credits	Child Abuse and Neglect Systemic nature, forms and indicators, and prevention of abuse/neglect. Factors contributing to, and intervention skills in, coping with the effects of abuse/neglect on children and families at risk. P: 212-124, 212-250, 212-264, junior standing. FWS	212-665	3 Credits	Administration - Early Childhood Education Programs A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required. FWS
212-641	2 Credits	Understanding Children's Play Definitions, theories and types of play; the role of adults in fostering play, and the contributions of play to other areas of children's development. P: 212-124, 212-294 or consent of instructor. WS	212-666	1 Credit	Family Planning Factors influencing family planning; knowledge and services for effective family planning practice. P: one undergraduate course in family relations.

212-685	2 Credits	Seminar – The Culturally Distinct Child and Family Study of cultural, ethnic, racial and economic influences on the child and family in the United States. Emphasis on knowledge and skills to improve human relations in settings serving young children and families. P: 212-350. Qualifies as ethnic studies Category A with 212-686. FW ES-A	214-227	3 Credits	Basic Merchandising Merchandising in department, specialty and discount stores; marketing strategies, operations, buying, trend merchandising, and fundamentals for apparel and hardlines. P: 214-120. F
212-686	1 Credit	Experience: The Culturally Distinct Child and Family Intensive experience working directly with racial, cultural or economic groups whose background the student does not share. P: prior or current enrollment in 212-685. Qualifies for ethnic studies Category A with 212-685. FW ES-A	214-229	3 Credits	Visual Merchandising Specialized study and application of merchandise/product presentation techniques for individual displays and store designs. Interpreting basic design elements and principles for display; selecting and using of appropriate tools, fixtures, and materials; coordinating visual presentations and other promotional activities to achieve marketing objectives. F
212-690	2 Credits	Death Education and Counseling in Families Death and dying theory; research, practice and application in education and individual and family counseling. P: 212-351 or consent of instructor. W	214-274	3 Credits	Apparel Manufacturing Production planning, quality control and analysis of apparel industry. P: consent of instructor. F
212-693	4-8 Credits	Practicum in Child Development and Family Life Practicum experiences in child development, family relationships and human resource management within a community agency, business or organization. P: consent of instructor. FWS	214-275	3 Credits	Apparel Grading/Marker Making Size grade apparel patterns for various figure types. Make markers and plan cutting of fabric. F
Apparel, Textiles and Design			214-280	3 Credits	Flat Pattern Develop paper patterns by varying a master pattern. Original garments are designed and constructed. P: 214-166. W
214-109	2 Credits	Applied Design for Family Living Identification and application of design elements and principles to specific areas of home economics. F	214-285	3 Credits	Design for Apparel Production Develop flat, float specification and presentation drawings for interpretation by apparel industry personnel. Adapt designs from numerous sources for industrial use via a variety of media and CAD systems. P: 214-112 and 214-166. W
214-112	3 Credits	Fashion Forecasting Design elements and principles as related to apparel. Interrelationship of fabric and style of apparel. Identification of style trends for the fashion industry. FW	214-329	3 Credits	Fashion Merchandising Promotion Application of fashion merchandising promotion procedures: display, oral and written promotional communication, and publicity. P: 214-227. \$ FW
214-120	2 Credits	Introduction to Apparel/Textiles/Merchandising Careers in fashion merchandising, clothing and textile industries terminology; professional and personal development. FW	214-330	2 Credits	Home Furnishings Merchandising Home furnishings merchandised by primary types of retail outlets. P: 214-225 and 214-227. FW
214-140	3 Credits	Textiles Selection, use and care of clothing and household fabrics: analysis of their components. \$ FW	214-339	1 Credit	Apparel Merchandising Merchandising female apparel from showroom to consumer. P: 214-140, 214-330. FW
214-166	3 Credits	Apparel Construction Construction theory and principles of fitting applied to garment construction. Recommended: 214-140. \$ FW	214-368	3 Credits	Experimental Clothing Application of problem-solving techniques in designing and constructing garments using client approach. P: 214-112, 214-140 and 214-280. \$ FW
214-202	3 Credits	Quality Analysis of Sewn Products Factors that influence quality levels in manufactured apparel and other sewn products. P: 214-120, 214-140. FW	214-374	3 Credits	Apparel Manufacturing Laboratory Practical application of concepts and procedures involved in the manufacture of marketable apparel products. P: 214-274, 214-275 and 214-280. \$ W

214-398	1-2 Credits	Field Experience Off-campus work and study in approved position to better understand challenges and potentials of various careers in merchandising and clothing and textile industries. P: 214-120. FWS	214-527	3 Credits	Store Management Develop management skills for retail stores of varying size. P: 214-430 or consent of instructor; senior or graduate standing. FW
214-400	1 Credit	Self-Presentation in Business Learn and practice skills of self-presentation in business and professional world. FW	214-533	3 Credits	Direct Mail Retail Direct mail options available in retailing. Creation and development of appropriate vehicles. P: 160-370 and junior standing or consent of instructor. FW
214-430	4 Credits	Merchandise Planning and Control Techniques of merchandising fashion departments: budgeting, assortment planning, managing inventory, buying for resale. P: 214-227, 355-119 or 355-120 and 160-207. FWS	214-535	1-2 Credits	Special Topics in Fashion Merchandising Special topics in fashion merchandising. P: junior standing; completion of basic courses within the area or consent of instructor. R FWS
214-435	1 Credit	Merchandising Systems Analysis, evaluation, and decision making regarding systems and reports used in major forms of retail operations and merchandising. F	214-535A	1-2 Credits	Special Topics in Fashion Merchandising Special topics in fashion merchandising. R FWS
214-449C	1-6 Credits	Clothing, Textiles and Design Cooperative Education Full-time supervised work experience with an approved clothing and textiles business/industry in an area related to the student's major concentration. Selection by application and interview. P: 214-398, 2.75 minimum grade point average and junior or senior standing at time of enrollment. \$ FWS	214-545	2 Credits	Textiles for Interiors Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses. FW
214-449F	1-6 Credits	Retail Co-op Education/Internship Full-time work and training in an approved position at a preselected business related to the student's major. Selection by application and interview. P: 214-398, 2.5 minimum grade point average, and senior standing at time of enrollment. \$ FWS	214-550	3 Credits	Textile Evaluation Problems in fiber identification, fabric performance and care; chemical and microscopic testing procedures; methods for gathering and interpreting data; individual problems. P: 214-140. FW
214-477	6 Credits	Study Abroad - American Fashion College A program for selected students which offers an opportunity to study at the American Fashion College in London with the opportunity to travel in Europe. P: Open only to Apparel Design/Manufacturing and Retail Merchandising and Management students. Requires a minimum grade point average of 2.5. Students must have completed 30 or more credits but not more than 96 credits. Students must have completed 16 credits at UW-Stout when applying. F	214-555	1-2 Credits	Special Topics in Textiles and Clothing Special topics in clothing and textiles. P: junior standing. R FW
214-492	2 Credits	Practicum in Textile Printing Use of textile design techniques: silk screen, tie dye, printing and batik; emphasis on good design and creativity. P: 304-101. \$ FW	214-555A	1-2 Credits	Special Topics in Textiles and Clothing Special topics in clothing and textiles. P: junior standing. R
214-519	3 Credits	International Economic Trends in Textiles/Clothing Economic importance of the textile and apparel industries in the United States and the world. P: 214-140 and 320-210. FW	214-568	3 Credits	Engineered Tailoring Industrial production methods applied to construction of tailored garments. P: 214-166. \$ FW
214-525	1 Credit	Men's and Boys' Merchandising Specialized techniques of merchandising men's wear and boys' wear: stock planning, market trends and controls. FW	214-581	3 Credits	Functional Clothing Design Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human body, structural properties of materials, and apparel forms. P: 214-368, 214-550. \$ FW
			214-590	3 Credits	Practicum in Textile Design Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique and hooking; emphasis on good design and creativity. P: 304-101 or consent of instructor. FW
			214-593	3 Credits	Design Problems in Textile Printing Advanced textile printing practicum with specific concern for design problems. P: 214-492 or consent of instructor. \$

214-594	3 Credits	Knit Design and Technology Stitch formation and patterning of warp and filling knits. Influences on aesthetics and performance of knit fabrics. Design and production of knitted fabric and garments on a flat bed knitting machine, including use of CAD techniques. P: 214-140 and 214-285. \$ FW	214-680	3 Credits	Draping Application of draping principles in design and construction of garments; emphasis on creativity. FW
214-610	3 Credits	History of Costume – Ancient to European Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume. F	214-685	2 Credits	Apparel Design Studio Creation, development and formal presentation of original designs using flat pattern and/or draping techniques. Preparation of professional portfolio to include CADD and other illustrative materials representative of individual expertise. P: 214-285, 214-581, 214-680.
214-611	3 Credits	History of Fashion – 19th Century to Present A study of the evolution of fashion from the 19th century to the present concentrating on the impact of the fashion designer and changing fashion trends. W	214-690	1-3 Credits	Advanced Fiber Design Creative exploration of textile design: stitchery and applique. P: 214-590. W
214-617	3 Credits	Social/Psychological Aspects of Clothing Social and psychological influence of dress on individual and group behavior patterns. FW	214-693	2 Credits	Structural Design and Weaving Experiences in loom weaving including two and four harness techniques. P: 304-101 or consent of instructor. \$ FWS
214-619	1 Credit	National Study Tour to Fashion Industry Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. P: consent of instructor and junior, senior or graduate standing. R FWS	214-694	2 Credits	Advanced Weaving Studio Complex hand-weaving techniques: block theory, pile constructions, leno techniques and double cloth. Individual work encouraged. P: 214-693 or equivalent. \$ FWS
214-625	2 Credits	Mass Merchandising Comparative history, planning, design, and techniques of merchandising and operations. P: 214-227, 214-339. FW	214-695	3 Credits	Historic and Contemporary Fabrics Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience. W
214-626	4 Credits	Fashion Retailing Practicum Observation and structured experience in merchandising procedures dealing with complete operations and management of retail establishment. P: 214-329 and 214-430 or consent of instructor. FWS	229-101	1 Credit	Dietetics As a Profession Survey of types of dietetic and food service administration programs in the United States; role and function of staff; professional literature. F
214-631	3 Credits	Service Management Strategies Analysis of modes of service. Planning strategies leading to quality implementation, utilizing extensive case studies. Also offered as 150-631. FW	229-105	1-2 Credits	Applied Nutrition Topics for Non-Majors Study of applied topics in nutrition. Open only to non-nutrition majors. R FWS
214-670	3 Credits	International Textile Apparel Sourcing Explore global market sources of apparel products for the vertical channel of fashion marketing. Analyze sourcing strategies and evaluate domestic/international sourcing options, considering human resources, transportation, communication, production capabilities, cultural priorities, political influences, costs, quality and technology. P: 320-210.	229-111	1 Credit	Food Systems and Technology Futures Introduction to food systems and technology with emphasis on trends, career opportunities and competencies required for success in the concentration areas of food systems management, food science, food merchandising and distribution, and food communication. F
214-674	3 Credits	Apparel Manufacturing: Computer Management Systems Computer use in managing apparel designs, manufacturing and data interchange. P: 214-275, 214-280, 214-274. \$ FW	229-124	4 Credits	Foods Scientific principles and application in the selection, preparation and service of food. FW
			229-136	1-2 Credits	Nutrition for Young Children Food needs of infants and young children. For early childhood education majors; not applicable for students with credit in 229-212. FW

229-202	2-3 Credits	Nutrition for Healthy Living Food selection and eating patterns/standards, applied nutrition knowledge and interrelationships, nutrition information source analysis, weight management, the nutrition-exercise-fitness connection. Analysis of personal lifestyle and food patterns in relationship to optimal physical and mental well being. FW GEH/PE HLTH	229-308	3 Credits	Management of Food Production Development and application of management principles to decision making in small batch food production which is based on menu driven concepts. P: 229-124 or 229-240, 229-212 or 229-202. \$ W
229-206	2 Credits	Nutrition in the Hospitality Industry Basic principles with application to the hospitality industry. Basic physiological nutrition, cultural and psychological influences on food preference. Interpretation of nutrition information, food composition data, and discussion of appropriate products and services. Nutrition analysis and programming on and off the computer will be stressed. Not appropriate for students with credit in 229-202 or 229-212. P: admission to Hospitality and Tourism Management program. FW	229-380	3 Credits	Community Nutrition Current status and legislation of community nutrition programs. Assessment of community needs and resources, program planning, funding, and evaluation. The role of the community nutritionist/home economist to help individuals, families, and communities solve nutrition problems. P: 229-212 and 229-308 or concurrent registration. W
229-212	3 Credits	Nutrition Basic principles of nutrition applied to current issues in health maintenance. For Dietetics, Family and Consumer Educational Services, Food and Nutrition majors, and/or students with science prerequisites. P: 308-132 and 311-115 or 311-125 FW	229-397	2 Credits	Field Experience FWS
229-220	1 Credit	Outdoor Cooking Food preparation principles in cooking and serving outdoors; equipment for outdoor food preparation; foods for camping, backpacking and canoe camping; preparing wild game and gathering and preparing wild foods. FWS	229-397C	1-2 Credits	Field Experience (Seminar) Field experience related to the dietetic, food industry, food service administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2-credit option. FWS
229-225	1-2 Credits	Special Topics in Food and Nutrition Study of special topics in food and nutrition. P: consent of instructor. R S	229-397E	1-2 Credits	Field Experience Field experience related to the dietetic, food industry, food service administration or food and/or nutrition education areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for 2-credit option.
229-240	4 Credits	Food Science Physical and chemical changes affecting selection, preparation and service of food. P: 311-201. F	229-404	3 Credits	Food Service for Children Overview of food preparation and food service administration principles with specific application to food production for children in the home and in centers. P: 229-136, 229-212. FW
229-260	2 Credits	Menu Planning and Design Principles of menu planning, design and production for commercial and institutional food establishments. W	229-407	2 Credits	Medical Terminology Medical terminology primarily for dietetic students. Prefixes, suffixes, word roots, combining forms, special endings, plural forms, abbreviations and symbols. Word-building system used to learn new terms and to decipher unfamiliar terms and check their spelling. Emphasis is placed on spelling, definition and usage with opportunity for pronunciation practice. FW
229-302	3 Credits	Food and Beverage Distribution Industry An introductory course for students in the field of food and beverage merchandising and distribution. A study of history, evolution, classification, manufacture/production, packaging, distribution, and merchandising with an emphasis on trends and employment. Resource persons from industry and field trips will be utilized. F	229-410	3 Credits	Advanced Nutrition Principles of human nutrition applied to individual, family, community and world problems. P: 229-212 and 311-511. F
229-305A	1 Credit	Baking Processes: Yeast Breads FW	229-442	3 Credits	Basic Sensory Analysis Basic understanding of the psychobiology and physiology of senses and the role both play in consumer product acceptance. Basic tests of sensory analysis, including both objective trained panel difference tests and subjective preference/acceptance tests. Appropriate for all majors who produce products for, or merchandise to, consumers. F
229-305D	1 Credit	Baking Processes: Pastry and Pasta FW			

229-446	1 Credit	Food Preservation Principles and practical application of methods of food preservation and storage. FWS	229-610	3 Credits	Food Policy Regulation and Law Food and nutrition policy development and evolution. Key acts and agencies governing food regulation and law. Process of creating or changing law. Compliance and enforcement rules in inspection, labeling, export and import. Administrative practice in food law including proceedings and judicial review. P: junior standing. W
229-449	1-6 Credits	Cooperative Education/Internship Work and study in an approved position to gain business/industry experience. Entails recurring, supervised work periods, building and expanding on previous experiences. P: consent of co-op mentor. \$ R FWS	229-612	1 Credit	Clinical Experience – Community Nutrition Programs Practical experience with community nutrition program; basic nutrition program or food service operation and nutrition education activity. Recommended: 229-618 and 229-630. P: 229-308, 229-410, 229-606, 229-380. FW
229-505	2 Credits	Nutrition for the Aged Nutrient requirements and food consumption patterns of the elderly; food services for aging Americans. P: 229-212 or consent of instructor. W	229-618	4 Credits	Diet Therapy Principles and methods for use of diet as therapy in certain pathological conditions. P: 229-308, 229-410. W
229-525	1-2 Credits	Special Topics in Food and Nutrition Study of special topics in food and nutrition. P: 229-212, consent of instructor, and for 500 level, completion of basic courses in the area. R F	229-620	1-3 Credits	Food Styling Food as media for artistic expression; effective use of color, form and texture. P: 229-124 and senior or graduate standing or consent of instructor. R FW
229-525A	1-2 Credits	Special Topics in Food and Nutrition Study of special topics in food and nutrition. P: 229-212, consent of instructor, and for 500 level, completion of basic courses in the area. R F	229-630	3 Credits	Food Behavior Food behavior: how it controls eating problems, resultant nutritional status; formation of food patterns to meet physical, physiological, psychological or social needs; modification of food behavior. Recommended: courses in social and behavioral sciences. P: senior or graduate standing and 229-212 (<i>preferably within past two years</i>). F
229-542	3 Credits	Advanced Foods Comparative studies of food selection and preparation; appraisal of foods. P: 229-124 or 229-240. W	229-633	3 Credits	Maternal and Child Nutrition Application of principles to maternal, infant, child and adolescent nutrition. P: 229-212 and 308-132. FW
229-550	3 Credits	Fast Food Operations Organization and function of fast food service operations. Work methods procedures, staffing, food quality and quantity control, space and equipment maintenance, safety, sanitation, merchandising and career options will be covered. Not available for credit to students who have taken 245-550. P: 229-124 or 229-240, 229-308 and 245-311. FW	229-638	3 Credits	Experimental Foods Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area. P: 229-124 or 229-240 and 311-201. FW
229-555	3 Credits	Sports Nutrition Nutritional and metabolic requirements of physical activity. Metabolic fuel utilization during exercise and physiological adaptations to exercise training will be discussed. The health and well-being benefits of an optimal diet-exercise regime will be emphasized. P: 229-410, 308-132, 311-511 or consent of instructor. WS	229-650	3 Credits	Food Processing Industrial methods used to prepare and preserve food. P: 229-124 or 229-240, 355-120. W
229-606	3 Credits	Nutrition Education Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources. P: 229-212, 242-201, 229-308, 229-410 or consumer course if required in program, consent of instructor, and junior standing. FW	229-661	3 Credits	Multicultural Aspects of Food and Nutrition Patterns Food and nutrition patterns as influenced by social, religious, geographical, economic and political factors. Cultures emphasized include Native American, African American, Hispanic and Asian American. Food as a means of cross-cultural communication. P: 229-124 or 229-240 and senior or graduate standing or consent of instructor. FW ES-C
			229-697	2 Credits	Field Experience

Home Economics Education

242-101	2 Credits	Experiential Learning in Family and Consumer Educational Services Contribution of home economics education to development of individuals and families; responsibilities of a professionally trained home economist. FW	242-503	3 Credits	Home Economics in the Middle and Elementary School Develop techniques, materials and curriculum concepts in home economics with application of human growth and development principles for teaching in middle and elementary school. W
242-201	2 Credits	Presentation Strategies for Home Economics Study of presentation strategies appropriate in the home economics field. FW	242-544	1-2 Credits	Future Homemakers of America Workshop Integration of Future Homemakers of America and the Home Economics Related Occupations student organizations into the home economics classrooms and programs. P: junior standing.
242-240	1 Credit	Clinical Experience in Microteaching Microlessons with microclasses will be videotaped and reviewed for self-evaluation and critique with instructor. FW	242-597	2 Credits	Field Experience in Home Economics Field experience related to home economics skills and knowledge used in teaching home economics wage-earning courses at secondary level. FWS
242-241	1 Credit	Clinical Experiences in the Community Plan and implement home economics learning experiences for children and adults in community programs. R FW	242-620	2 Credits	Vocational Programs in Home Economics Techniques, materials and curriculum for home economics wage-earning programs in secondary and post-secondary schools; preliminary procedures for program development. P: 199-502 and 242-301. FW
242-301	3 Credits	Home Economics Curriculum Development of curriculum to meet needs of students in home economics programs. P: junior or senior standing. FW	242-651	2 Credits	Family Life Education Programs Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. P: senior standing and consent of instructor. FW
242-341	1 Credit	Clinical Experience in Schools Supervised experience in classroom teaching for development of motor, perceptual, social and cognitive learning through home economics substantive areas. Recommended: 242-240. P: junior standing. R FW	Hospitality and Tourism		
242-448	6 Credits	Student Teaching - Home Economics Education/Family Life Student teaching practicum in K-12 settings in home economics education/family life. P: 242-301, 242-460 recommendation of home economics screen committee and grade point of 2.75. FW	245-100	2 Credits	The Role of Management in Hospitality Industry Prospective managers define and analyze nature of work, people, change and education and their interrelationships within hospitality industry. FW
242-460	2 Credits	Home Economics/Family Life Evaluation Develop evaluation for home economics subject matter and critical-thinking skills. Not applicable to occupational certification. P: 242-301 or concurrent enrollment. FW	245-200	2 Credits	Introduction to Property Management Management in commercial and multi-family property. Employees, management tools, government involvement, community development, clients, property law and tax requirements. FW
242-488	8 Credits	Internship Teaching Alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one semester. P: 242-301. FW	245-201	2 Credits	Housekeeping Procedures Management principles applied to duties and responsibilities of housekeepers in hotels, motels, institutions and other hospitality enterprises. FW ES-C
242-500	4-8 Credits	Externship - Home Economics Community Education Practicum in one or more of the following home economics education programs: extension services, elementary education, post-secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. P: consent of department chair. FW	245-202	3 Credits	Front Office Operations Principles required to organize and operate hotel or motel front office guest needs, salesmanship and procedures for different types of front office operations. FW
			245-205	3 Credits	Hospitality Organization Management Management principles for hotels and restaurants, supervisory development and training, labor relations, union contracts, ownership and financial structure, and managerial interpretation and evaluation of current systems and procedures. P: 245-100. FW

245-222	2 Credits	Institutional Food Purchasing Methods of large-quantity food purchasing; determining standards, specific needs and industrial offerings; formulating specifications, buying procedures and controls. P: 229-124. FW	245-344	3 Credits	Hospitality Marketing and Sales Analysis of theories, fundamental principles and techniques of hospitality marketing and convention sales; functions, interrelationships and coordination of all hospitality departments and their roles in assuring success of marketing effort. P: junior standing or permission of the instructor. FW
245-240	2 Credits	Introduction to Tourism and the Travel Industry Principles and current knowledge of domestic and international tourism; benefits to community, area, state and nation; trends and potentials. P: 320-210. FWS	245-348	2 Credits	Hospitality Convention/Meeting Planning The roles and responsibilities of professional hospitality meeting planners and hotel convention sales/service managers are examined for purposes of planning or hosting a major convention, or a corporate, association, or special group meeting event. P: 245-344 or consent of instructor. FW
245-249	1-6 Credits	Cooperative Education/Internship Work and study in an approved position to gain business/industry experience. Generally entails recurring, supervised work periods, each one building and expanding on the previous one. \$ R FWS	245-349	1-6 Credits	Cooperative Education/Internship Work and study in an approved position to gain business/industry experience. Generally entails recurring, supervised work periods, each one building and expanding on the previous one. P: 245-249 and consent of co-op mentor. \$ R FWS
245-250	3 Credits	Family Housing Relationship of space, equipment, aesthetics and culture to human habitat. F	245-360	3 Credits	Consumer Economics Motives for consumption, family income and expenditures, selection of commodities and services, buying and selling practices; evaluate consumer aids, investigate local situations. P: 320-201. F
245-310	3 Credits	Introduction to Wines and Spirits Applied and historical knowledge of wines and spirits from different regions of the world; emphasis on preparation, selection, accompaniment with food, basic cost control analysis and service. P: 229-124 or consent of instructor and legal drinking age. \$ FWS	245-370	3 Credits	Hotel and Restaurant Accounting Design and interpretation of specialized accounting and financial control systems in management decision making; uniform system of accounts, departmentalized costing procedures, statement analysis and interpretation. P: 160-206. FWS
245-311	4 Credits	Quantity Food Production Quantity food production management concepts; menu planning, work production schedules, production analysis, food and labor cost controls, and sales projections, crisis and service management techniques; lab work in quantity food production and service; recipe development and introduction to productivity and work simplification concepts. P: 229-124 or 229-240 and 229-206 or 229-212 or consent of instructor. FWS	245-371	3 Credits	Food, Beverage and Labor Cost Controls The use of financial techniques and systems to control food, beverage and labor costs in hospitality food service operations. FWS
245-312	3 Credits	Restaurant Operational Management Service of special functions, banquets, receptions: planning, preparation service, menu planning, cost controls, classical buffet setups and personnel organization. P: 229-124 and 245-311. FWS	245-375	2 Credits	Computer Systems for Food Service Functions of computers in a variety of food service operations with specific emphasis on point-of-sale systems and food service application hardware. Hands-on experience using the NCR 2160 system and microcomputers. P: 200-325 or 300-101, 245-311, 245-371 or 354-140 or consent of instructor. FWS
245-340	3 Credits	Development of Tourism Attractions Diversified natural and man-made background tourism elements (<i>BTE</i>): preservation and incorporation of concepts for development of tourism destinations. P: 245-240 and 320-210. W	245-381	2 Credits	Property Management Applications Monitoring tenant activity and lease agreements for residential, commercial, institutional, and industrial types of real property. P: 245-200 or consent of instructor. FW
245-341	3 Credits	Tourism Goods and Services Total and component parts of tourism goods and services; present and future patterns of supply and demand. P: 245-240 and 320-201. FW	245-397	2 Credits	Field Experience
			245-398	1-2 Credits	Hotel and Restaurant Field Experience Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. P: 245-100. FWS

245-436	2 Credits	Commercial and Residential Lighting Practical information on light for general residential living; sociological, psychological and physical aspects of lighting environment. F
245-449	1-6 Credits	Cooperative Education/Internship Work and study in an approved position to gain business/industry experience. Generally entails recurring, supervised work periods, each one building and expanding on the previous one. P: 245-205, 245-240, 245-311, 245-371, consent of co-op mentor. \$ R FWS
245-455	2 Credits	Kitchen Planning Arrangement of work centers, equipment, storage and activities for maximum efficiency in residential kitchen design. P: 245-250 or consent of instructor. FS
245-482	3 Credits	Seminar in Hotel and Restaurant Management An advanced course in management. The student will select and research a current topic of importance to the industry. R
245-498	1-2 Credits	Hotel and Restaurant Field Experience Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. P: 245-100. FWS
245-501	3 Credits	Food Service Administration Organization and administration of institutional food service systems, personnel selection and training, cost control and problems of supervision. P: 229-318. F
245-506	3 Credits	Club Management Managing a membership, city, health and fitness, military, golf, or other social and/or recreation club. F
245-515	3 Credits	Lodging Administration Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-efficient organization. P: 245-201 and 245-202. FW
245-521	2 Credits	Food Service Equipment Factors affecting design, selection, physical facilities and utilities involved in food service equipment. P: 183-110. FW
245-549	1-6 Credits	Cooperative Education/Internship Work and study in an approved position to gain business/industry experience. Generally entails recurring, supervised work periods, each one building and expanding on the previous one. P: 245-449 and consent of co-op mentor (undergraduate credit). Students must be enrolled in a graduate program and have consent of coop mentor for graduate credit. \$ R FWS
245-550	3 Credits	Fast Food Operations Organization and function of fast food service operations. Work methods, procedures, staffing, food quality and quantity control, space and maintenance, safety, sanitation, merchandising and career options will be covered. Not available for credit to students who have taken 229-550. FW
245-600	2 Credits	Integrated Management Systems - Hospitality Exploration, comparison and synthesis of practices, concepts and theories in hospitality management systems. P: 245-205. FW
245-614	3 Credits	Catering Theory and application of operational and managerial principles for on/off-premise catering for special events. (Cannot be taken for credit by students who have taken 229-614.) P: 229-124, 229-260 or consent of instructor, junior standing or higher. W
245-625	3 Credits	Hospitality Industry Law and Liability Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality. P: 160-318. FWS
245-626	2 Credits	Hospitality Industry - Employee and Labor Relations Investigation of employee and labor relations in the hospitality industry; history, legality and techniques of dealing with unionization. FW
245-640	3 Credits	Sociocultural System of Tourism Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourists and residents. F
245-644	3 Credits	Resort Planning and Operation Planning and operation of individual destination resorts. Analysis of resort concept, history, master planning, environmental impact, facility design, maintenance and operational management. P: 245-340 or consent of instructor. W
245-645	3 Credits	Geography of Tourism Locational analysis of land use and human migration in national and international tourism. P: 245-240, 245-340 or consent of instructor. W
245-656	2 Credits	Microwave Oven Application of microwave heating principles to food preparation and service. FWS
245-660	1 Credit	Consumer Credit Types and sources of credit, determination of credit costs, considerations before using, and regulatory laws. P: 245-360 or consent of instructor. S
245-670	3 Credits	Hospitality - Financial Analysis/Budget/Forecasting Application of accounting and financial analysis techniques to managerial decision-making in hospitality industry. P: 160-206, 245-370 and 245-371. FWS

245-676 2 Credits

Family Finance

Financial decisions and judgments that average individuals and families must make during a lifetime; income and occupation, family expenditures, credit, savings, taxes and estate plans. **P:** 320-201. **FW**

245-678 2 Credits

Financial Planning for Retirement

Financial considerations made in preparing for and during retirement. Emphasis on the values, goals, income, expenditures, credit, savings, investments, taxes and estate plans. **P:** senior standing. **FWS**

245-681 2 Credits

Special Problems in Habitational Resources

Current problems in habitational resources; seminar topic chosen by instructor, individual or group. **R FWS**

245-681A 2 Credits

Special Problems in Habitational Resources R FWS

245-682 1 Credit

Hospitality and the Handicapped Traveler

Provide increased sensitivity to needs of handicapped traveler; problems and possible solutions for hospitality organizations. **W**

245-684 2 Credits

Seminar in Property Management

Culminating professional course for the property management minor program. Preparation of a property management plan for a specific property. Discussion of current trends and industry problems.

P: reserved for final semester for students in Property Management minor. **W**

Interdepartmental – Liberal Studies

300-081 3 Credits

ESL Writing

Development of basic English language skills in composition at sentence, paragraph and essay level. Review of and individual development of correct usage of English grammar and mechanics.

P: ESL placement tests or approval of ESL institute director. **FWS**

300-082 3 Credits

ESL Reading

Development of academic reading skills through analysis of textbook organization, strategies of discourse and syntax analysis, and strategies of vocabulary development.

P: ESL placement tests or approval of ESL institute director. **FWS**

300-083 3 Credits

ESL Listening/Speaking

Development of skills in communicating in spoken English, including pronunciation, intonation and listening comprehension.

P: ESL placement tests or approval of ESL institute director. **FWS**

300-084 3 Credits

ESL Listening and Speaking for Academic Purposes

Development of skills in understanding and producing spoken English for academic purposes, including effective strategies for comprehending academic lectures and for oral participation in the classroom.

P: ESL placement tests or approval of ESL institute director. **FWS**

300-087 2 Credits

ESL Listening/Speaking Practicum

Review of skills in communicating in spoken English, including pronunciation, intonation, and listening comprehension. (Intended for undergraduate and graduate-level ESL students who elect to review basic listening/speaking skills. Meets concurrently with 300-083.) **P:** ESL students only. **\$ FWS**

300-088 2 Credits

ESL Academic Listening and Speaking Practicum

Review of skills in understanding and producing English for academic purposes, including effective strategies for comprehending academic lectures and for oral participation in the classroom. (Intended for undergraduate and graduate-level ESL students who elect to review academic listening and speaking skills. Meets concurrently with 300-084.) **P:** ESL students only. **\$ FWS**

300-101 2 Credits

Computer Literacy

Brief interdisciplinary introduction to computers, including the areas of hardware, software, history, programming logic and language, different types of systems and applications of computers in various areas. A student who takes Computer Applications in Business (354-142) cannot also get credit in Computer Literacy. **FW**

300-210 2 Credits

Introduction to Women's Studies

An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. **FW ES-B**

300-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor and department chair. **\$ FWS**

300-250 2 Credits

Soviet Seminar Tour

Introduction to Russian civilization and contemporary Soviet society and government: tours of schools, museums, churches and historical sites; seminars with Soviet students and community leaders. **W**

300-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor and department chair. **\$ FWS**

300-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor and department chair. **\$ FWS**

300-511 1-3 Credits

Topics in Women's Studies

Exploring, from interdisciplinary perspective, new information and ideas in a selected area of significance to women's studies.

P: 300-510 or consent of instructor.

300-575 2 Credits
The Ascent of Man
 Exploring the nature and intellectual, philosophical and technical growth of humankind using "The Ascent of Man" TV series as basis for thought and discussion. **P:** junior standing or consent of instructor. **W**

Anthropology

303-220 3 Credits
Cultural Anthropology
 Introduction to concepts and methods; variability of culture; outline of cultural elements; processes of cultural change. **FWS GES/BSCI ANTH ES-B**

303-249 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor and department chair. **\$ FWS**

303-250 3 Credits
The Human Past
 Biological anthropology: humans as primates, origins of humans, stages of human evolution, and relationship of biology and culture. **FW GES/BSCI ANTH**

303-300 3 Credits
Native Americans
 North American Indians: Native American cultures prior to European contact, Indian/European historical relationships and contemporary reservation/urban Indian life and issues. **FW GES/BSCI ANTH ES-A**

303-349 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. **\$ FWS**

303-410 2 Credits
Cultural Orientation and Field Experience Aboard
 Practical and theoretical intercultural orientation for the study/living abroad experience and evaluation of this field experience upon return. Students must have a study abroad experience to complete the requirements of this course. **FW**

303-449 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. **\$ FWS**

303-610 3 Credits
The Anthropological Study of Family Systems
 Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions.
P: 303-220 or consent of instructor. **W**

303-660 2 Credits
Anthropology of Human Relations
 Human relations, viewed intraculturally and cross-culturally, explored through family culture and its networks with the greater society, world view systems, and communication patterns. Applications to specific Wisconsin cultures. **W**

Art

304-100 3 Credits
Drawing I
 Concentration on the development of visual sensitivity through drawing with various media. **FW GEHUMART CR/PRF**

304-101 3 Credits
Fundamentals of Design
 Basic two- and three-dimensional design using various media for development of visual sensitivity. **FW GEHUMART CR/PRF**

304-102 1 Credit
Introduction to Art and Design
 Introduction to various disciplines and activities in art and design. Not appropriate for general education requirement. **FW**

304-145 2 Credits
The Practice of Art
 Introduction to creative concepts, techniques of presentation, practices in studio art, function of criticism, portfolio ingredients and opportunities in the art world. **S**

304-202 3 Credits
Introduction to Art
 Art appreciation and historical survey for the non-art major. **F GEHUMART ART/MU**

304-204 3 Credits
Interior Design
 Design and development of interior spaces with a sensitivity to human interaction, materials, and furnishing. **P:** 304-101. **FW**

304-210 3 Credits
Letter Form Design
 Design of letterforms, figures and visual symbols; history and development of type; calligraphy; page composition for various formats and audiences.
P: 304-100, 304-101. **\$ F**

304-249 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. **\$ R FWS**

304-256 1-3 Credits
Art Workshop
 Selected art concepts, processes and media will vary to serve special student populations. Credit determined by individual contract.
P: consent of instructor. **R FWS**

304-300	3 Credits	Design Theory and Methods A study and application of various techniques and theories of design to fundamental design problems. P: 170-205 or 304-101 FW	304-340	3 Credits	Industrial Design II Increased understanding of design as applied to the resolution of complex product design. P: 304-330. FW
304-304	3 Credits	Interior Design II Design problems for interior spaces with emphasis on concepts, human interaction and materials. P: 304-204. FW	304-349	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
304-305	3 Credits	Presentation Techniques Experience in the various techniques of visually developing and presenting a design. FW	304-360	3 Credits	Graphic Design II Application of social, business and ethical factors affecting visual communication, while increasing sensitivity and experience in graphic design. P: 304-310. \$ FW
304-310	3 Credits	Graphic Design I Study and creation of visual images used to inform and/or persuade specific audiences. P: 304-101. \$ FW	304-380	3 Credits	Signage and Exhibition Design Organization and design of environmental graphics through the production of signage, display, and exhibition support systems. P: 304-360. \$ S
304-314	2 Credits	Interior Design Procedures and Specifications Professional procedures and specifications for interior design proposals; quality control, material performance, public standards and use of related forms. P: 304-204. S	304-405	3 Credits	Advanced Presentation Techniques for Designers Techniques and skills for presentation and communication of visual materials; advanced perspective, mixed-media rendering, transparent watercolor rendering, gouache rendering applied to presentation of product's interiors and exteriors. P: 304-305. FW
304-315	3 Credits	Environmental Interior Design I Analysis and application of various office systems as they apply to and are a part of an architectural setting. P: 304-204.	304-410	3 Credits	Product and Packaging Graphics Design and application of graphics to products, packages, and related display systems. P: 304-360 (or 304-310 with instructor consent). \$
304-316	3 Credits	Environmental Interior Design II Analysis and application of various systems in an architectural setting for use in the design of public spaces, such as banks, malls, restaurants and hotels. P: 304-204.	304-430	4 Credits	Industrial Design III Advanced design problems chosen by consultation between student and instructor. P: 304-330 and 304-340. FW
304-319	3 Credits	Evolution of Design Examination of basic concepts which influence the evolution of architecture, art and design. S	304-431	2 Credits	Symposium in Interior Design Exposure to and discussion of the practical working world of the interior designer. P: concurrent enrollment in 304-316. FW
304-320	3 Credits	Interior Furniture Design Applied studio projects with structural, material, economic and aesthetic considerations in the design of contemporary furniture. FW	304-432	1 Credit	Industrial Design Portfolio Role and actual development of an industrial designer's portfolio with emphasis on importance of the portfolio in communicating with prospective employers throughout the career. P: 304-340. FW
304-330	3 Credits	Industrial Design I First course in the industrial design sequence providing an overview of design skills in the application to the resolution of product design problems. P: 304-300 and 304-305 or 170-205. FW	304-440	4 Credits	Industrial Design IV Professional level of understanding and skill applied to advanced design problem chosen in consultation between student and instructor. P: 304-430. FW
304-335	3 Credits	Product Form Design Exploration of product forms through drawing and model-building techniques. P: 304-300, 304-305, 304-330, 170-102, 170-103. FWS	304-449	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS

304-451	3 Credits	Interior Design Practicum Work experience with an interior designer or in design-related field arranged with interior design work experience coordinator. P: 304-204. FW
304-480	4 Credits	Senior Project – Graphic Design Exploration of an advanced graphic design topic through an extensive project: research, production specification, and development of a presentation system. P: 304-380 and 304-410. \$
304-500	1-3 Credits	Drawing II Continuation of 304-100; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. P: 304-100. R FW
304-501	3 Credits	Life Drawing I Drawing the human figure in action or at rest; problems in figure composition. P: 304-100 and 304-500. FW
304-502	1-3 Credits	Life Drawing II Advanced problems in figure composition and graphic interpretation of the figure. Initial enrollment must be for 3 credits. P: 304-501. R FW
304-503	3 Credits	Design Application of basic design principles using various media for development of visual sensitivity to three-dimensional form. P: 304-101. FW
304-509	3 Credits	Painting I Introduction to character and use of various painting media; work from still life and life with reference to problems of two-dimensional color composition. P: 304-500. FWS
304-510	1-3 Credits	Painting II Advanced work in oil painting; exploitation of medium for creative and expressive ends. Initial enrollment must be for 3 credits. P: 304-509. R FWS
304-511	3 Credits	Sculpture I Introduction to sculptural concepts. P: 304-500 or equivalent. FW GEHUMART CR/PRF
304-512	1-3 Credits	Sculpture II Advanced problems in sculpture; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. P: 304-511. R FW
304-513	3 Credits	Ceramics I Basic design and techniques of ceramic production for artist/potter; forming, firing and surface treatment. FWS GEHUMART CR/PRF
304-514	1-3 Credits	Ceramics II Use of clay, glazes and kiln for design and production of high-fired ceramics. Initial enrollment must be for 3 credits. P: 304-513. R FWS
304-515	3 Credits	Art Metal I Design and construction of jewelry and objects in precious and non-precious materials with relationship to human interaction. P: 304-101 or equivalent. FWS GEHUMART CR/PRF
304-516	1-3 Credits	Art Metal II Advanced problems in design and construction of jewelry, hollow forms and objects in precious and non-precious materials. Initial enrollment must be for 3 credits. P: 304-515. R FWS
304-517	3 Credits	Printmaking I Introduction to the concepts and techniques of printmaking. P: 304-100 and 304-101. FWS
304-518	1-3 Credits	Printmaking II Advanced work in the processes of relief, silkscreen, etching or lithographic printmaking. Initial enrollment must be for 3 credits. P: 304-500 and 304-517. R WS
304-520	1 Credit	Clay and Glaze Laboratory Procedures and processes in testing of clays; formulation of clay bodies and development of clay slips and ceramic glazes for artist/potter. P: 304-513 or 304-514 or consent of instructor.
304-522	3 Credits	Modern Art The main currents and developments in art from Monet and Cezanne to 1950. F
304-523	3 Credits	Survey of Art – Ancient Through Medieval The painting, sculpture, architecture and minor arts in the ancient western world. GEHUMART ART/MU
304-524	3 Credits	Survey of Art – Renaissance Through 20th Century Sculpture, painting, architecture and minor arts of western world from 14th century to present. GEHUMART ART/MU
304-525	3 Credits	Egyptian and Mesopotamian Art The evolution of the arts of ancient Egypt and the Near East.
304-526	3 Credits	Greek and Roman Art The arts of ancient Greece and Rome.
304-527	3 Credits	Medieval Art The arts of Europe and Byzantium from late Roman Empire to end of Middle Ages.
304-528	3 Credits	Italian Renaissance Art Architecture, sculpture and painting of the Italian Renaissance from 14th to 17th century.

304-530 3 Credits

Northern Baroque Art

Architecture, painting, sculpture and other art forms of 17th century Northern Europe.

304-531 3 Credits

Southern Baroque Art

Development of art in Southern Europe from Italian Renaissance to 18th century.

304-532 3 Credits

Economics of House Furnishing

Study of consumer house furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to house furnishing markets. **F**

304-533 3 Credits

Period Furnishings

A survey of furniture and furnishings in the western world. **F**

304-545 1 Credit

Senior Seminar

Professional practice including portfolio and senior exhibition; current ideas and career opportunities within the art profession.

P: senior standing in program. **S**

304-556 1-3 Credits

Advanced Art Workshop

Selected art concepts, processes and media will vary to serve special student populations. For students familiar with workshop approach or advanced in art program. Credit determined by individual contract.

P: consent of instructor. **R**

304-602 3 Credits

American Art

Development of visual arts in the United States from colonial period to 1950.

304-603 3 Credits

19th Century Art in Europe

History of European art from about 1800 to 1900.

304-604 3 Credits

Art Since 1950

Developments in painting and sculpture in Europe and America since 1950.

304-606 3 Credits

Oriental Art

Art from prehistoric times to 19th century in China, Japan and their spheres of influence.

304-607 3 Credits

Aesthetics

Examination of the philosophers of contending theories in art.

P: 304-522. **FW**

Art Education

305-208 2 Credits

Preteaching Observation

Art education practices in K-12 classrooms through on-site observations, teaching-related activities and discussions. (A minimum of 50 hours of observation required.) **F**

305-302 2 Credits

Introduction to Teaching Art in Elementary Schools

Art education knowledge and skills for elementary-school teaching.

P: 305-208 or consent of instructor. **FW**

305-303 2 Credits

Introduction to Teaching Art in Secondary Schools

Art education knowledge and skills for secondary-school teaching.

P: 305-208. **FW**

305-311 2 Credits

Curriculum Development for Art Education

Development of a sequential K-12 art curriculum: needs and methods.

P: 305-208, 305-302 and 305-303. **W**

305-408 8 Credits

Student Teaching in the Elementary School - Art

Directed teaching and community experience in selected off-campus elementary schools. **P:** 305-403. **FW**

305-409 8 Credits

Student Teaching in the Secondary School - Art

Directed teaching and community experience in selected off-campus secondary schools. **P:** 305-303. **FW**

Biology

308-122 3 Credits

Introductory Biology

Principles of biology: cellular metabolism, heredity and relationships between living organisms and their environments, with laboratory. **FWS**

GENSCI LFSC LAB

308-125 3 Credits

Biology of Aging

Understanding the aging process. Physiological, demographic, immunological and overall health aspects of aging. **W GENSCI LFSC**

308-132 4 Credits

Physiology and Anatomy

Basic concepts of physiological processes and anatomy of all organ systems of humans, based on dissection of a cat; embryological development. **FWS**

GENSCI LFSC LAB

308-134 4 Credits

Physiology and Anatomy for Health Sciences

Introductory human anatomy and physiology with emphasis on physiological mechanisms which maintain homeostasis. Students may not receive credit for both 308-134 and 308-132. **FW GENSCI LFSC LAB**

308-142	4 Credits	Botany Introduction to structure and function of plants, survey of plant kingdom, and structure and life history of representative forms of plant life. FW GENSCI LFSC LAB	308-333	1 Credit	Genetics Laboratory Perform genetic crosses to reinforce understanding of principles of heredity; <i>drosophila</i> (fruit fly) will be primary experimental organism. Experience in test breeding, observing, tabulating and interpreting results, as in actual genetic research. P: 308-332 or concurrent registration. FW GENSCI LFSC LAB
308-150	2 Credits	Environmental Science The relationship of humans to the natural environment. Study of ecological principles in relation to contemporary problems such as resource utilization, human population dynamics, and waste and pollution control. FWS GENSCI LFSC	308-342	2 Credits	Community Hygiene Disease prevention through education, sanitation, isolation and immunization, public health programs and operation of federal and state laws. FWS GEH/PE HLTH
308-152	4 Credits	Zoology Introduction to fundamental concepts of animal life, survey of animal kingdom, structure and physiology of representative animals, evolutionary relationships. FW GENSCI LFSC LAB	308-349	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
308-162	3 Credits	Biotechnology Techniques of modern biotechnology, emphasizing laboratory production and analysis of recombinant DNA. P: high school biology and chemistry, or equivalent. FW GENSCI LFSC LAB	308-350	3 Credits	Ecology Interrelationships of organisms with their abiotic and biotic environments. P: 308-122, concurrent registration, or consent of instructor. FW GENSCI LFSC LAB
308-206	1 Credit	Food Service and Environmental Sanitation Microbial problems in food service industry: sanitation, storage, handling, distribution, serving, personnel, equipment and facilities. FW	308-352	3 Credits	Applied Botanical Practice Plant care, management and propagation skills. P: 308-142. FWS
308-220	3 Credits	Physiology of Disabilities Etiology, pathology, clinical symptoms, prognosis, treatment, physical limitations resulting from specific diseases and disabilities. P: 308-132 or consent of instructor. FW	308-358	2 Credits	Introductory Pharmacology Fundamental principles of major groups of drugs; actions and interactions in human body. (Some science background recommended). FW
308-249	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS	308-362	3 Credits	Advanced Physiology Physiological processes: digestion, respiration, metabolism, excretion, circulation and muscle. Histological studies of blood, experiments with frog and turtle hearts, nerve and muscle preparation. Respiratory, nerve, circulatory and muscle experiments on human body. P: 308-132 or consent of instructor. FW
308-306	4 Credits	General Microbiology Structure and physiology of yeasts, molds and bacteria; growth requirements, methods used in culture and identification, bacterial analysis of water and milk, other problems in sanitation and food bacteriology. FW	308-449	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
308-310	3 Credits	Human Sexual Biology Structure, function and coordination of human reproductive organ system; reproductive cell formation and function; problems of fertility, sterility, sexuality, birth control and relationship to population challenges. P: 308-122 or 308-132. FW GENSCI LFSC	308-506	3 Credits	Food Microbiology Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific groups of economically important microorganisms. P: 308-306. FW
308-332	2 Credits	Genetics Fundamental principles of genetics, their functions and applications to plants, animals and man. FW GENSCI LFSC	308-650	2 Credits	Neuroanatomy Cross and functional anatomy of the human nervous system with emphasis on the brain and autonomic division. F

308-651 2 Credits
Psychobiology
 Biological basis of human and animal behavior: evolution of physiological and behavioral adaptations of organisms to their environment. **W**

Chemistry

311-115 5 Credits
General Chemistry
 Fundamental principles of chemistry: structure, compound formation, bonding, reactions, oxidation-reduction, solutions, colloids, equilibrium and acids and bases; demonstration of applications to contemporary problems, environmental effects. **\$ FWS GENSCI PHYSC LAB**

311-125 5 Credits
Principles of Chemistry for Health Sciences
 Principles of chemistry: general, reaction stoichiometry, equilibrium and thermodynamics. For Dietetics, Food Systems and Technology and other allied health science majors. **\$ F GENSCI PHYSC LAB**

311-135 5 Credits
College Chemistry I
 Principles of inorganic chemistry, properties of important elements and compounds. More rigorous approach and more extensive coverage than in 311-115. Normally followed by 311-136.
P: 355-120 or placement into 355-121 or higher. \$ FW GENSCI PHYSC LAB

311-136 5 Credits
College Chemistry II
 Reactions and properties of common elements and inorganic compounds; oxidation-reduction and solution equilibria; electrochemistry. Lab work in qualitative analysis for common ions.
P: 311-135 or 311-125 or consent of instructor. \$ FW GENSCI PHYSC LAB

311-201 3 Credits
Organic Chemistry Lecture
 Introduction to chemistry of carbon compounds; characteristic reactions of the several functional groups; also aliphatic and aromatic compounds. Taken concurrently with 311-203. **P: 311-125 or 311-135 consent of instructor. FW**

311-203 1 Credit
Organic Chemistry Laboratory
 Lab course to be taken concurrently with 311-201. **\$ FW**

311-204 3 Credits
Organic Chemistry II Lecture
 Basic organic chemistry; organic reaction mechanisms. Taken concurrently with 311-206. **P: 311-201. W**

311-206 1 Credit
Organic Chemistry II Laboratory
 Lab course to be taken concurrently with 311-204. **P: 311-201 and 311-203. \$ W**

311-249 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ FWS

311-349 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ FWS

311-449 1-8 Credits
Cooperative Education Program in Liberal Studies
 Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.
P: consent of instructor or department chair. \$ FWS

311-501 3 Credits
Physical Chemistry Lecture
 Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with 311-503. Recommended: 311-531.
P: 311-115 or 311-125 or 311-135 and 355-156. W

311-503 1 Credit
Physical Chemistry Laboratory
 Lab course to be taken concurrently with 311-501. Experimental techniques and apparatus; treatment of experimental data. Recommended: 311-531.
P: 311-115 or 311-125 or 311-135 and 355-156. \$ W

311-511 4 Credits
Biochemistry
 Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work in metabolism, chromatography, enzyme action, qualitative and quantitative analytical procedures. **P: 308-132 and 311-201. \$ FW**

311-515 3 Credits
Food Chemistry
 Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (*Maillard-Browning reaction*), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods.
P: 311-115 or 311-125 or 311-135, 311-201 and 311-203. \$ W

311-531 3 Credits
Quantitative Analysis
 Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. **P: 311-115 or 311-135. \$ F**

311-535 3 Credits
Instrumental Methods of Analysis
 Application of instrumental methods to chemical analysis: electrochemical, spectral; applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Recommended: 311-531.
P: 311-115 or 311-125 or 311-135. \$ W

311-541 4 Credits
Chemistry of Materials
 Relationship of the chemistry and microstructure of structural materials (*metals, polymers and ceramics*) to their properties; degradation of those materials, corrosion of metals, polymers and ceramics. **P: 311-115 or 311-125 or 311-135. \$ FW**

311-553	3 Credits	Environmental Chemistry Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution and/or are of current importance; chemical technology needed to correct imbalance. P: 311-115 or high school chemistry and consent of instructor. \$ FW	320-325	3 Credits	Economic and Business Statistics Method of collection, analysis, and presentation of economics, social, and business data. Ratios, frequency distributions, averages, variability, linear regression, correlation, time series analysis, and principles of index numbers. P: 355-118 or equivalent. FW
311-612	3 Credits	Advanced Biochemistry Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids. P: 311-201, 311-203 and 311-511. FW	320-335	2 Credits	Personal Securities Investments Major aspects of security investments: common and preferred stocks, bonds, mutual funds. P: 320-201 or 320-210.
Industrial Hygiene			320-349	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
312-410	2 Credits	Industrial Hygiene Instrumentation Workplace environment evaluation using direct reading instruments and integrated sampling techniques in the laboratory. P: to be taken concurrently with 312-542. \$ F	320-370	3 Credits	Comparative Economic Systems Functions of all economic systems. Theories of capitalist, communist, and socialist systems. Comparison of the systems of different countries. P: 320-215.
312-542	3 Credits	Industrial Hygiene Principles and techniques for recognizing, evaluating and controlling existing or potential occupational health hazards that affect employee safety and health. P: 311-115 or consent of instructor. FW	320-380	3 Credits	Business and Economic Forecasting Survey of macroeconomic and microeconomic forecasting techniques, data collection and analysis. P: 320-215 and 320-325 or 354-130 or 354-530. W
312-652	3 Credits	Hazardous Waste Management Management of hazardous wastes; compliance with governmental regulations in recognition, storage, shipping and reporting of hazardous wastes. P: 311-115. \$ FWS	320-410	3 Credits	Microeconomics Value and distribution theory; analysis of demand-firm, industry and utility; pricing of production factors. P: 320-215. FW
Economics			320-415	3 Credits	Macroeconomics Determination of aggregate income, employment, growth rates and price levels; monetary and fiscal policies necessary for full employment. P: 320-215. FW
320-201	3 Credits	General Economics Introduction to basic elements of economics; analysis of institutions, issues and policy; theories of price, national income and employment. Not open to students taking 320-210 and 320-215. FW GES/BSCI ECON	320-420	3 Credits	Labor Economics Basic labor theory; history of organized labor in western industrial societies; collective bargaining as viewed by labor, management, government and public; institutions involved in modern labor relations. P: 320-201 or 320-210. FWS
320-210	3 Credits	Principles of Economics I Basic economic concepts and economic institutions, national income and employment analysis, business fluctuations, money and banking; monetary fiscal policies. P: sophomore standing. FWS GES/BSCI ECON	320-421	2 Credits	Collective Bargaining and Labor Relations Introduction to collective bargaining in the United States; formation, substance and administration of a labor agreement, current labor law, role of National Labor Relations Board. P: 320-201, 320-210 or consent of instructor. FWS
320-215	3 Credits	Principles of Economics II Price theory, income distribution, factor pricing, market mechanisms, functions of economic system, labor and collective bargaining and international economics. P: 320-210. FWS GES/BSCI ECON	320-425	3 Credits	Economic Development Social and economic factors underlying economic development. Capital formation, measurement of growth, population problems. Considers both theory and practical problems. P: 320-215.
320-249	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS			

320-435 3 Credits

Money, Banking, Financial Markets

Money and bank credit, modern monetary theories, monetary policy.

P: 320-201 or 320-210. **FW**

320-440 3 Credits

Principles of Investment

Principles and techniques of investment for people in business; construction and management of security portfolios. P: 160-207. **FW**

320-445 3 Credits

Public Finance

Public finance at all governmental levels; taxation, expenditures, debt management and fiscal policy. P: 320-215. **W**

320-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

320-470 3 Credits

Economic Model-Building and Forecasting

Quantitative models and methods applied to forecasting; regression techniques. P: 320-215, 354-331 and 355-275 or consent of instructor. **FW**

320-510 3 Credits

Women and Work

Issues pertaining to changes in women's roles in the paid labor force, including past and present participation, the female-male earnings gap, public policy, and employer response. **FW ES-B**

320-680 3 Credits

International Trade

Theory and practice of capital movements; foreign exchange rates and controls; balance of payments; tariffs. **FW**

English and Journalism

326-090 3 Credits

Writing Workshop

Remedial writing course providing individual instruction to meet basic competencies for entry into 326-101, Freshmen English – Composition. Will not count toward graduation. **FW**

326-101 3 Credits

Freshman English – Composition

Principles and practices of writing; documented paper.

P: acceptable score on English department placement exam or a grade of 2.0 (C) or better in 326-090. **FWS GECOMMSK WRIT**

326-102 3 Credits

Freshman English – Reading and Related Writing

Readings focused on a theme reflected in literature. Topics and approaches developed by each instructor; opportunity for responsible, independent study; requires intensive practice in composition.

P: 326-101. **FWS GECOMMSK RDG**

326-111 3 Credits

Freshman English – Honors I

Readings in world literature and related writing for training in composition techniques; documented paper.

P: departmental selection based on ability. **FW GECOMMSK WRIT**

326-112 3 Credits

Freshman English – Honors II

Continuation of 326-111.

P: 326-101 or 326-111 or departmental selection based on ability. **FW GECOMMSK RDG**

326-204 3 Credits

The Short Story

Style, structure, history and development of short story as a literary form.

P: 326-102 or 326-112 **FW GEHUMART LIT**

326-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

326-250 3 Credits

Classical and Biblical Literature in Translation

Selections from Greek, Hebrew and Latin literature.

P: 326-102 or 326-112. **FW GEHUMART LIT**

326-300 3 Credits

Children's Literature

Critical survey of literature for children (*birth to age 12*); introduction to and directed practice of presentation methods. P: 326-102 or 326-112. **FW ES-C**

326-301 2 Credits

Advanced Grammar

Traditional grammar and practical transformational-generative grammar for good professional writing and editing.

P: 326-101 and 326-102 or 326-111 and 326-112.

326-303 3 Credits

The Family in Literature

Literature about the family selected from several historical periods and cultures.

P: 326-102 or 326-112. **W GEHUMART LIT ES-C**

326-307 3 Credits

Writing for the Media

Theory and practice of writing for the media. P: 326-102 or 326-112. **F**

326-310 1 Credit

Journalism Practicum

Work on regularly published newspaper and submit articles for evaluation and publication. P: Journalism minor or concentration. **R FW**

326-320 3 Credits

Business Writing

Effective techniques for writing persuasively in business communications: requests, cordial contact, sales, and education and training programs.

P: 326-102 or 326-112. **FWS**

326-340	3 Credits	The Structure of English New analytic and descriptive methods applied to modern English. P: 326-102 or 326-112.	326-380	3 Credits	Best-Sellers Fiction and non-fiction best-sellers: expression of and impact on popular culture. P: 326-102 or 326-112. FWS GEHUMART LIT
326-345	3 Credits	Creative Writing All aspects of imaginative writing. P: 326-102 or 326-112 and consent of department chair. R FW GEHUMART CR/PRF	326-381	3 Credits	Recent American Literature American poetry, fiction and drama since 1950. P: 326-102 or 326-112. FW GEHUMART LIT ES-B
326-346	3 Credits	Informational Writing Writing for service organizations, education, the helping professions, the humanities and social sciences. P: 326-102 or 326-112. FW GECOMMSK WRIT	326-385	3 Credits	Science Fiction Critical survey of popular and classic science fiction. P: 326-102 or 326-112. GEHUMART LIT
326-347	3 Credits	Critical Writing The art of evaluation and judgment; writing critical reviews and articles; documented critical paper. P: 326-102 or 326-112. FW GECOMMSK WRIT	326-401	3 Credits	English Literature Selected prose and poetry from 1798 to modern times. P: 326-102 or 326-112. W GEHUMART LIT
326-348	3 Credits	American Literature American prose and poetry from its beginnings to World War I. P: 326-102 or 326-112. FW GEHUMART LIT	326-402	3 Credits	Concepts of Literary Criticism A systematic approach to literary theory, criticism and history. The science and art of form and structure as presented by great critics with emphasis on new criticism. P: 326-102, 326-112.
326-349	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS	326-406	3 Credits	Shakespeare Several representative plays and selected criticism. P: 326-102 or 326-112. W GEHUMART LIT
326-350	3 Credits	Modern British Literature Selected poetry, prose and fiction produced since World War I. P: 326-102 or 326-112. FW GEHUMART LIT	326-407	2 Credits	Teaching English in the Secondary and Middle School Methods for teaching English in the secondary and middle schools. P: 326-101 and 326-102 or 326-111 and 326-112, senior standing, enrollment in the English teaching minor.
326-355	3 Credits	Recent World Literature Selected readings in contemporary literature in translation. P: 326-102 or 326-112. F GEHUMART LIT	326-418	1 Credit	Writing on Issues Advanced writing skills developed through reading, thinking and writing about major issues. P: 326-102 and consent of instructor. FWS
326-360	3 Credits	Modern American Literature Selected poetry, prose and drama produced since World War I. P: 326-102 or 326-112. FWS GEHUMART LIT ES-B	326-425	2 Credits	Copy Editing and Preparation Develop skill in expanding and reducing written materials; experience in copy reading, proofreading, headlines. P: consent of instructor. W
326-372	3 Credits	Women Writers Analyze writing of prominent American and British women novelists and poets of 19th and 20th centuries; criticism of women writers. P: 326-102 or 326-112. GEHUMART LIT	326-449	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
326-373	2 Credits	American Multicultural Literature American multicultural literature, focusing on Hispanic, African, Asian, and Native American writers. P: 326-101 and 326-102 or 326-111 and 326-112. FW GEHUMART LIT ES-A	326-450	2-3 Credits	Studies in Literature (Theme, Author, Genre) Analysis and interpretation of significant genres of American folklore related to historical experience. Field-based research. P: 326-102 or 326-112 and three credits of literature or consent of instructor. R FW GEHUMART LIT

326-468 1 Credit

Industrial Technology Senior English Seminar

In-depth study of an internationally significant theme using literature (*fiction, poetry, and non-fiction*) as a vehicle for developing higher level skills in reading, thinking and writing.

P: 326-102 or 326-112, senior standing and enrollment in the Industrial Technology program and approval of English adviser.

326-500 3 Credits

Literature for the Reading Child and Adolescent

Critical survey of literature for children (*age 8 to beginning to read adult literature*); adolescent literature and media presentations of literature.

P: 326-102 or 326-112. W

326-515 3 Credits

Technical Writing

On-the-job writing for business and industry; reports, letters and other documents. P: 326-102 or 326-112 and junior standing. FWS

326-518 3 Credits

Mass Communication in American Society

History, social implications and future of mass media of communications.

P: 326-102 or 326-112. F

326-535 3 Credits

Writing Technical Manuals

Production of a technical manual-planning procedure, collecting information, analyzing audience, writing and field testing.

P: 326-101, 326-102, 326-515 or consent of instructor.

326-537 1-3 Credits

Technical Writing Practicum

Plan, write and produce a technical document for a client. Principles of document design, clear writing for a specific audience, methods of determining client needs, and methods of producing the final document.

P: 326-515 or equivalent and consent of instructor. R FWS

326-546 3 Credits

Research Reporting

Effective organization and presentation of individual research.

P: 326-102, 326-112. FW

326-601 1-3 Credits

Juvenile Fiction Seminar

Children's literature, emphasizing the picture book. Methods of selecting and reading picture books of all types with critical examination. Literary, historical and social implications of picture books.

P: 326-300 or 326-500, senior standing or consent of instructor.

French

328-100 1 Credit

Menu French

Pronunciation of food items and menu terms. Vocabulary comprehension. Basic phrases for haute cuisine and for ordering food in a restaurant. Reading recipes in French.

328-101 4 Credits

Elementary French I

Introduction to basic audiolingual skills, essentials of grammar and reading for comprehension. Supplementary materials drawn from cultural heritage of France. Minimum of one laboratory hour required. FW GECOMMSK LNG

328-102 4 Credits

Elementary French II

Continuation of 328-101. A minimum of one laboratory hour required.

P: 328-101. W GECOMMSK LNG

328-121 2 Credits

Practical French I

First quarter college French. Conversational phrases and vocabulary for practical situations. Basic present tense verb patterns. Intensive pronunciation drill. FW

328-122 2 Credits

Practical French II

Second quarter college French. Conversational phrases and vocabulary, irregular and past tense verb patterns. P: 328-121 or consent of instructor. Not for students who completed 328-101. W GECOMMSK LNG

328-201 4 Credits

Intermediate French I

Grammar review, vocabulary improvement, oral practice, original composition, and readings that stress French civilization and literature. Minimum of one laboratory hour required. P: 328-102 or two years of high school French. F GECOMMSK LNG

328-202 4 Credits

Intermediate French II

Continuation of 328-201. Minimum of one laboratory hour required.

P: 328-201. W GECOMMSK LNG

Spanish

329-103 4 Credits

Elementary Spanish I

Introduction to conversational Spanish as spoken today in Mexico and South America. F GECOMMSK LNG

329-104 4 Credits

Elementary Spanish II

Continuation of 329-103. Conversational Spanish as spoken today in Mexico and South America. P: 329-103. W GECOMMSK LNG

329-121 2 Credits

Practical Spanish I

Pronunciation, basic phrases for everyday situations, comprehension of short written and spoken sentences, basic grammar summary, introductory vocabulary with program-specific modules, cross-cultural topics. Not open to students who have completed 329-103. FWS

329-122 2 Credits

Practical Spanish II

Elementary vocabulary, conversational phrases, Hispanic culture, present and past tense verbs, object pronouns, choice of career-related language supplements. Not open to students who have completed 329-103.

P: 329-121, one semester of high school Spanish. FW GECOMMSK LNG

329-201 4 Credits

Intermediate Spanish I

Extensive development of vocabulary including common idioms, aural comprehension, correct pronunciation, recognition of verb tenses in written Spanish. Readings based on contemporary life in Hispanic countries. Listening practice with authentic recorded materials.

P: 329-104, two years of high school Spanish. **FW GECOMMSK LNG**

329-202 4 Credits

Intermediate Spanish II

Complete grammar review of standard Spanish, applicable to both conversational situations and business or personal correspondence. Review of essential vocabulary and phrases. Accuracy and fluency in spontaneous conversation and free composition. **P:** 329-201, three years of high school Spanish. **W GECOMMSK LNG**

Chinese

330-121 2 Credits

Mandarin Chinese IA

Mandarin Chinese IA. Basic Chinese vocabulary and conversational phrases. Accuracy and fluency in guided conversation. Emphasis on correct pronunciation. Written materials use Romanized alphabet. **FW**

330-122 2 Credits

Mandarin Chinese IB

Mandarin Chinese IB. (*Continuation of introduction to spoken Mandarin Chinese.*) Vocabulary and conversational phrases. Accuracy and fluency in guided conversation. Brief exposure to written characters.

P: 330-121 or consent of course coordinator. **FW GECOMMSK LNG**

330-123 2 Credits

Mandarin Chinese IC

Spoken Chinese vocabulary and sentence patterns. Sentence types whose word order differs significantly from English: questions, locations, going and coming. Written materials use Pinyin Romanization. Extensive use of audio cassettes outside class. Emphasis on correct pronunciation and tones.

P: 330-122. **W GECOMMSK LNG**

German

331-121 2 Credits

Practical German IA

First quarter college German. Conversational phrases and vocabulary for practical situations. Basic present tense verb patterns. Intensive pronunciation drill. **F**

331-122 2 Credits

Practical German IB

Second quarter college German. Conversational phrases and vocabulary. Present and past tense verb patterns. Nominative, accusative and dative case in short sentences. **P:** 331-121 or consent of instructor. **FW GECOMMSK LNG**

Geography

336-104 3 Credits

World Geography

Introduction to regional and cultural geography of the world; physical and human resources of major areas of the globe. **FW GES/BSCI GEOG**

336-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

336-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

336-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

History

338-120 3 Credits

Early United States History

U.S. history to 1865: political, economic and social forces that have shaped the nation to close of Civil War. **FWS GEHUMART HIST ES-B**

338-121 3 Credits

Modern United States History

U.S. history since 1865: political, economic and social forces that have shaped the nation since close of civil war. Not open to those who have completed 338-105. **FWS GEHUMART HIST ES-B**

338-140 3 Credits

Western Civilization

Survey of Western civilization along the Nile, the Fertile Crescent, through Greece, Rome, the Middle Ages, the Renaissance, and the Reformation. **FW GEHUMART HIST**

338-141 3 Credits

Western Civilization

Survey of Western civilization from Reformation to present. **FW GEHUMART HIST**

338-210 3 Credits

Modern World

Modern trends in terms of historical backgrounds as frame of reference for interpreting modern world. **FWS GEHUMART HIST**

338-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

338-315 3 Credits

History of East-Central Europe

History, geography, and culture of east-central Europe, primarily Poland, Czechoslovakia and Hungary. **GEHUMART HIST**

338-320 3 Credits

History of Russia

Survey of Russia's historical development since 862. **W GEHUMART HIST**

338-330 3 Credits

History of World War II

Causes, conduct and effects of World War II. **FW GEHUMART HIST**

338-340 3 Credits

English History

Social, political, religious, military and economic history of Great Britain from Restoration (1660) to modern times.

338-345 3 Credits

Modern British History

Modern political and economic history of Great Britain from 1832 to 1980. Offered only at the Wisconsin in Scotland (WIS) Center. **FW**

338-347 3 Credits

Introduction to British Civilization

British society, culture, economy and politics in the modern period since 1850. Offered only at the Wisconsin in Scotland (WIS) Center. **FW**

338-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

338-360 3 Credits

Asian History

Survey of political, social, religious and economic history of Asia, India, China, Japan and the Philippines in modern world. **F GEHUMART HIST**

338-380 3 Credits

Latin American History

Political, social and economic history of Middle and South America, pre-Columbian to present. **GEHUMART HIST**

338-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor and department chair. **\$ FWS**

Applied Mathematics

354-130 2 Credits

Elementary Statistics

Concepts and application of probability and statistics: data analysis (*graphical displays, numerical summary measures*); probability and probability distributions; concepts of statistical inference (*estimation and hypothesis testing*). Illustrated with output from statistical computing packages. **FWS GEANRSN STAT**

354-140 2 Credits

Computer Concepts

Introduction to computing; history of computers, hardware, software and terminology; components and functions of computers; programming concepts and basic applications; running programs written by others; writing programs in basic time-sharing language. **FW**

354-141 2 Credits

Computer Programming – BASIC

Beginning computer programming using BASIC: input, output, flow of control, arrays, files and subprograms. **FWS GEANRSN MATH**

354-144 3 Credits

Computer Science I

Problem-solving and algorithm development using a high-level programming language. Computer organization, programming language and programming, elements of programming style, documentation, introduction to structured programming. **FW GEANRSN MATH**

354-145 3 Credits

Computer Science II

Problem-solving and algorithm development using a high-level language. Structured programming concepts, debugging and testing, string processing, searching and sorting, elementary data structures, recursion and files.

P: 354-144. **FW**

354-240 3 Credits

FORTAN Programming

FORTAN programming language and its use in scientific and engineering applications. **P:** 354-141. **W**

354-241 3 Credits

Assembly Language Programming

Basic concepts in computer systems including computer structure, machine language, assembly languages, addressing techniques, macros, file I/O, program segmentation and linkage. **P:** 354-145 or 354-240 or equivalent. **FW**

354-246 3 Credits

Computer Programming – COBOL

Introduction to computer systems and their use; development of programming practices and techniques, flowcharting, and application through business-oriented translating language. **P:** 354-141. **FW**

354-330 4 Credits

Introduction to Probability and Statistics

Exploratory data analysis; basic probability, probability distributions, mathematical expectation; basic statistical inference, sampling distributions, estimation; linear models and designed experiments; reliability and quality control. **P:** 355-154 or 355-157. **FW**

354-331 3 Credits

Probability and Mathematical Statistics I

Sample spaces. Probability functions for discrete and continuous sample spaces. Conditional probability and independence. Random variables; probability density and cumulative distribution functions; joint, marginal, and conditional distributions. Expected values, moments, and moment-generating functions. Binomial, hypergeometric, poisson, normal, and gamma distributions. **P:** 355-154 or 355-157, completion of or concurrent enrollment in 355-158 is highly recommended. **FW**

354-332	3 Credits	Probability and Mathematical Statistics II Sampling distributions, order statistics, introduction to decision theory, estimation, hypothesis testing, nonparametric methods, regression and correlation, analysis of variance. P: 355-154 or 355-157 and 354-331. FW	354-448	3 Credits	Software Engineering Software development lifecycle, programming languages and environments, program testing, documentation, software management and organization. Class software development project. P: 354-341, 354-145 or consent of instructor. FW
354-341	3 Credits	Data Structures Review of set theory, functions and relations; basic concepts of data; lists, strings and arrays; representation of graphs and trees; storage systems and structures; symbol tables and searching techniques; sorting (<i>ordering</i>) techniques. P: 354-145 and 355-275. FW	354-475	2-8 Credits	Applied Mathematics Internship Off-campus work and study in approved position to gain experience in using computer and/or statistical techniques in the analysis and solution of real-world problems. Interns receive salaried appointments with cooperating companies for summer or summer plus one semester. P: junior standing. R FW
354-342	3 Credits	Survey of Programming Languages Programming languages and language design. Comparative study of three modern high-level languages and their application strengths for systems programming, embedded computer systems and artificial intelligence. P: 354-145 and 354-241 and 354-341. FW	354-490	2 Credits	Mathematical Models I Supervised experiences in construction of mathematical models for the solution of problems in area of student's needs and interests; resource materials. P: senior standing in Applied Mathematics. F
354-343	3 Credits	Mathematical Foundations of Computer Graphics Fundamental hardware, software, mathematics, data structures and algorithms for computer graphics. P: 354-241, 354-341, 355-158, 355-275. F	354-491	2 Credits	Mathematical Models II Continuation of 354-490. P: 354-490. W
354-441	3 Credits	Computer Organization Hierarchical organization of a computer system: CPU, memory, I/O modules. Detailed analysis of the CPU and control unit implementation. P: 354-241 and 354-341 or concurrent enrollment in 354-341. F	354-530	3 Credits	Statistical Methods Histograms, mean and standard deviation, combinatorics, probability; binomial, hypergeometric, normal, chi-square, T and F distributions and their uses; statistical inference; contingency tables, linear models, analysis of variance with appropriate applications. P: 355-120 or equivalent and three years of high school math. FW GEANRSN STAT
354-442	3 Credits	Systems Programming Design, organization and case studies of major systems software: assemblers, loaders, linkers, macroprocessors, compilers, and operating systems. Relationship between machine architecture and system software. P: 354-441. W	354-531	2 Credits	Design of Experiments I Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. P: 354-332 or consent of instructor. F
354-443	3 Credits	Database Systems Manipulation and Design Conceptual and logical organization of data, data models, data manipulation and data definition languages, and design of databases. Distributed database systems; object-oriented database systems; and expert database systems; integrity, constraints, concurrency, security, and query optimization. P: 354-342. FW	354-532	2 Credits	Design of Experiments II Fixed-effect, random-effect and mixed models; nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of covariance, response surfaces, sequential analysis. P: 354-531. W
354-446	3 Credits	Numerical Analysis I Theory and applications of numerical methods for linear algebra, non-linear equations and polynomial interpolation. P: 355-158, 355-275, 354-145 or 354-240 or equivalent. F	354-545	3 Credits	Image Processing Theory and applications of digital image processing. Mathematical foundations and algorithms for enhancement, restoration, compression, segmentation and reconstruction from projections. P: 355-255, 355-275, 354-341, 354-332 or consent of instructor. W
354-447	3 Credits	Numerical Analysis II Theory and applications of numerical methods for approximation, numerical integration and differentiation, differential equations, and fourier analysis. P: 354-446, 355-255. W	354-590	1-3 Credits	Topics Topics of current importance in applications of mathematics to problems in business, industry, government or society. R S
			354-590A	1-3 Credits	Topics Topics of current importance in applications of mathematics to problems in business, industry, government or society. R S

Mathematics

355-010 2 Credits

Fundamentals of Algebra

Review of fundamental principles of elementary algebra. Credit earned for 355-010 will not count toward graduation. **FW**

355-110 4 Credits

Intermediate Algebra

Basic algebraic skills: factoring, exponents, rational expressions, linear equations and inequalities, systems of equations, quadratic equations, and an introduction to functions. **P:** one year of high school algebra and demonstrated proficiency on math placement test. **FW**

355-118 4 Credits

Concepts of Mathematics

Elementary concepts in mathematical language and reasoning, sets, number systems and theory, algebraic equations, statistics and probability, geometry, computers, historical survey. **P:** minimum of one year high school algebra. **FWS GEANRSN MATH**

355-119 4 Credits

Business Mathematics

Review of arithmetic and basic algebra; simple and compound interest, inventory control and purchase planning; applications to retailing, marketing, accounting, finance, consumerism and insurance. **FW**

355-120 4 Credits

Introductory College Mathematics I

Review of basic algebra, solving equations and inequalities, applications of equations and inequalities, functions and their graphs, polynomial equations, and systems of equations.

P: demonstrated proficiency on math placement test. **FWS GEANRSN MATH**

355-121 4 Credits

Introductory College Mathematics II

Continuation of 355-120. Study of functions to include rational, exponential, logarithmic, and trigonometric functions and two-dimensional analytic geometry. **P:** 355-120 or demonstrated proficiency on math placement test. **FW GEANRSN MATH**

355-123 4 Credits

Finite Mathematics With Applications

Real number system, systems of linear equations and inequalities, sets, functions, vectors, matrices, probability, linear programming, theory of games, Markov chains. **P:** 355-120 or consent of department chair. **FWS GEANRSN MATH**

355-152 4 Credits

Calculus for Management and the Social Sciences

Basic concepts of calculus with applications in the managerial and social sciences. **P:** 355-123. This course is not equivalent to 355-153 Calculus I nor is it a suitable prerequisite for 355-154 Calculus II. **FW GEANRSN MATH**

355-153 4 Credits

Calculus I

Functions, limits, continuity, bounds, sets, the derivative of functions and applications, exponential, logarithmic, trigonometric and inverse functions. Not open to those with credit in 355-154, 355-156, 355-157 or 355-158.

P: 355-121 or equivalent. **FWS GEANRSN MATH**

355-154 4 Credits

Calculus II

Continuation of 355-153: antiderivatives; integration theory and techniques, applications; parametric equations, vectors. **P:** 355-153. **FW GEANRSN MATH**

355-156 5 Credits

Calculus and Analytic Geometry I

Review of real numbers, inequalities, absolute values, intervals and continuity; analytic geometry of the plane, limit concepts, derivatives of algebraic functions, definite integral. Not open to those with credit in 355-153, 355-154 or 355-157. **P:** demonstrated proficiency. **F GEANRSN MATH**

355-157 5 Credits

Calculus and Analytic Geometry II

Application of derivative and definite integral; conic sections and other algebraic curves; calculus for rational, algebraic, circular, exponential and trigonometric functions; formal integration. **P:** 355-156. **FW GEANRSN MATH**

355-158 3 Credits

Calculus III

Formal integration continued; parametric equations, polar representation, Cauchy's formula, Taylor's theorem, infinite series, vectors, partial differentiation, multiple integration. **P:** 355-154 or 355-157. **FW**

355-249 1-8 Credits

Applied Mathematics: Co-op Education Internship

Work and study in an approved position to gain business, industrial and other experience. Normally entailing recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

355-255 3 Credits

Differential Equations

Common types of ordinary differential equations of first and second order; linear equations with constant coefficients; series solutions, numerical approximations, systems of ordinary equations.

P: 355-154 or 355-157 and 354-141 or concurrent registration. **FW**

355-262 3 Credits

Modern Geometry

Development of logical discourse, betweenness properties and plane separation, geometric models of axiomatic systems, modern geometry of triangle and circle, transformations (*linear, circular*), orthogonal systems of circles, elliptic and hyperbolic geometry. **P:** 355-153 or 355-156. **W**

355-275 3 Credits

Linear Algebra

Algebra of linear transformations and matrices. Determinants, equivalence relations, rank systems of equations, vector spaces, orthogonal transformations, characteristic equations and quadratic forms.

P: 355-153 or 355-156. **FW**

355-349 1-8 Credits

Applied Mathematics: Co-op Education Internship

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

355-350	3 Credits	Vector Analysis Basic theory of vectors. Vector differential calculus and vector integral calculus of two and three dimensions with applications. P: 355-158. FW
355-370	3 Credits	Modern Algebra I Set theory, mappings, equivalence relations and classes, mathematical induction, Peano's postulates, isomorphisms, development of natural numbers, integers, rational and real numbers; introduction to integral domains and rings. P: 355-154 or 355-157. F
355-371	3 Credits	Modern Algebra II Continuation of 355-370; rings, integral domains, fields, polynomials, groups, vector spaces; introduction to algebra of matrices. P: 355-370. W
355-449	1-8 Credits	Applied Mathematics: Co-op Education Internship Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
355-450	3 Credits	Real Analysis I Rigorous development of advanced topics in analysis; functions, real numbers, sequences, Cartesian spaces, sequences of functions, limit superior and inferior, continuous functions. P: 355-154 or 355-157. F
355-451	3 Credits	Real Analysis II Continuation of 355-450; differentiation, integration, infinite series. P: 355-450. W
355-460	3 Credits	Complex Variables With Applications Complex numbers, analytic functions, elementary functions of complex variables, mapping of elementary functions, integration techniques, power series and calculus of residues. P: 355-255. W
Music		
360-101	1 Credit	Class Piano I Group instruction in piano technique and repertoire at beginner level. One one-hour lesson per week; additional practice time required. FW GEHUMART CR/PRF
360-102	1 Credit	Class Voice I Group instruction in vocal technique. Solo performance in class. R FW GEHUMART CR/PRF
360-111	1 Credit	Advanced Piano I Private instruction in piano technique and repertoire. One half-hour lesson per week; additional practice time required; optional recital. FW
360-112	1 Credit	Advanced Voice I Private instruction in vocal technique and repertoire. One half-hour lesson per week; additional practice time required; optional recital. FW
360-130	2 Credits	Music Appreciation Music materials as they pertain to perceptive listening; music and musicians from medieval times to present; students gain significant awareness of great music. FWS GEHUMART ART/MU
360-201	1 Credit	Class Piano II Continuation of 360-101 at intermediate level. One one-hour lesson per week; additional practice time required. FW GEHUMART CR/PRF
360-206	2 Credits	Music for the Young Child Music elements and experiences, methods and materials for guiding the musical growth of children from birth through third grade. P: 360-101 or equivalent or knowledge of music fundamentals. FW
360-211	1 Credit	Advanced Piano II Continuation of 360-111. FW
360-212	1 Credit	Advanced Voice II Continuation of 360-112. FW
360-249	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entailing recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
360-264	1 Credit	Jazz Band Jazz styles and improvisation from the dance band era to the present. Study and performance of contemporary "big band" jazz. Membership is open to all qualified students. Audition may be necessary. R FW GEHUMART CR/PRF
360-265	1 Credit	College Choir Advanced choral techniques, reading and analysis of choral music of all types and periods. Concert and radio appearances. R FW GEHUMART CR/PRF
360-266	1 Credit	Stout Concert Band Fundamentals of musical expression, tone production and quality, and special problems of technique. Membership by audition only. R FW GEHUMART CR/PRF
360-267	1 Credit	Stout Symphonic Singers Advanced choral techniques, reading and analysis of choral music of all types and periods. Membership by audition only. R FW GEHUMART CR/PRF

360-268 1 Credit

Solo and Ensemble

Coaching of advanced vocal and instrumental performers for public performance. **R FW**

360-270 1 Credit

Vocal Jazz Ensemble

Performance of vocal jazz in a select choral ensemble. Membership by audition only. **R FW GEHUMART CR/PRF**

360-311 1 Credit

Advanced Piano III Continuation of 360-211. **R FW**

360-312 1 Credit

Advanced Voice III Continuation of 360-212. **R FW**

360-349 1-8 Credits

Cooperative Education Programs in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

360-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous

P: consent of instructor or department chair. **\$ FWS**

Philosophy

365-201 3 Credits

Introduction to Philosophy

Introduction to the principal problem areas and history of philosophy, as well as to the nature of philosophical investigation. **FW GEHUMART PHIL**

365-250 3 Credits

Critical Thinking

Formulation, clarification and critical evaluation of claims: justification through non-formal argumentational strategies. **FWS**

365-301 3 Credits

Introduction to Logical Thinking

Problem-solving strategies based on induction and on categorical and propositional deduction. **FW GEANRSN LOG**

365-305 3 Credits

Philosophy of Religion

Principal philosophical problems in the various dimensions of religious experience and belief. **P:** sophomore standing. **F GEHUMART PHIL**

365-315 3 Credits

Eastern Philosophy

Philosophies of India, China and Japan: Hinduism, Buddhism, Confucianism, Taoism and Zen Buddhism. **P:** sophomore standing. **W GEHUMART PHIL**

365-375 3 Credits

Personal and Professional Ethics

Ethical valuing process and major ethical standards applied to personal and professional life. **FW**

Physics

372-211 3 Credits

Introduction to Physics

Introduction to principles of physics, including mechanics, fluids, heat and thermodynamics, light and sound, electricity and magnetism; their applications to specific technologies. **P:** 355-120. **FW GENSCI PHYSIC**

372-212 1 Credit

Introduction to Physics: Lab

Measurement, analysis and presentation of laboratory data on basic physics concepts, including mechanics, fluids, heat, electricity, light and sound.

P: 372-211 or concurrent registration. **\$ FWS GENSCI PHYSIC LAB**

372-222 2 Credits

Heat and Thermodynamics

Concepts of temperature and heat, temperature-dependent properties and processes, heat transfer; laws relating heat and other forms of energy.

P: 372-221. **FWS**

372-231 4 Credits

General Physics I

Algebra- and trigonometry-based general physics course: mechanics and sound with laboratory. **P:** 355-121, a math pre-test. **\$ FWS GENSCI PHYSIC LAB**

372-232 4 Credits

General Physics II

Algebra- and trigonometry-based general physics course: electricity and light with laboratory. **P:** 372-231. **\$ FWS GENSCI PHYSIC LAB**

372-241 5 Credits

College Physics I

Calculus-based general physics course: mechanics and thermodynamics with laboratory. **P:** 355-153 or 355-156, a math pre-test. **\$ FW GENSCI PHYSIC LAB**

372-242 5 Credits

College Physics II

Calculus-based general physics course: electricity, sound, light and selected topics in modern physics with laboratory. **P:** 372-241. **\$ FW GENSCI PHYSIC LAB**

372-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

372-251 1 Credit

Topics in Astronomy

Qualitative analysis emphasizing physical principles of selected topics in astronomy. Significance of modern methods of obtaining astronomical information. **FWS GENSCI PHYSIC**

372-252 1 Credit

Laser Light and Waves

Wave properties of laser light; interference and diffraction as general properties of waves; importance of interference and diffraction effects in laser light, holography and other applications of laser light. **FW GENSCI PHYSIC**

372-254	2 Credits	Earth Physics Physical processes involved in rock formation, mountain building, erosional landscapes, plate tectonics, earthquakes and geologic dating. Not open to those with credit in 372-257. F	372-527	3 Credits	Solid State Physics Crystalline structure, lattice vibration and energy states, Brillouin zones, electrons in metals, semi-conductors, and dielectric and magnetic properties of solids. P: 372-282 or 372-242 and 355-157 or 355-154. F
372-255	2 Credits	Meteorology Physical processes that determine properties of the earth's atmosphere: precipitation, atmospheric circulation, weather, climate and human influence on the atmosphere in the framework of physics. FW	372-529	3 Credits	Atomic and Nuclear Physics Elements of atomic and nuclear physics. P: 372-223 and 355-153. W
372-257	3 Credits	Introduction to Geology and Soil Mechanics Physical processes involved in rock formation, mountain building, erosional landscapes, plate tectonics, earthquakes and geologic dating. Elementary soil mechanics. Not open to those with credit in 372-254. FW	372-531	3 Credits	Statics Essential elements of statics: simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces, trusses and other structures. P: 354-141, 355-153 and 372-221. F
372-281	5 Credits	University Physics I Calculus-based general physics course: mechanics and thermodynamics with laboratory. P: 355-154 or 355-157 or concurrent registration. Math pretest. \$ W GENSCI PHYSC LAB	372-533	3 Credits	Dynamics Essential elements of dynamics: rectilinear, angular and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. P: 372-531. W
372-282	5 Credits	University Physics II Calculus-based general physics course: electricity, sound, light and selected topics in modern physics with laboratory. P: 372-281. \$ F GENSCI PHYSC LAB	372-535	3 Credits	Optics Optics with emphasis on the wave nature of light: interference diffraction, polarization and coherence; their applications in holography. P: 372-223, one year of calculus. W
372-321	4 Credits	Statics and Strength of Materials Force and moment equilibrium including friction, trusses, frames and machines. Simple and compound stress and strain including beams and joints. No credit for students taking 372-325 or 372-531. P: 372-231 or 372-241 or 372-281. FW	Political Science		
372-325	3 Credits	Strength of Materials Fundamental theory of strength of materials. Analysis of tension, compression, shear, biaxial tension and compression, torsion, stresses and deflection of beams. P: 372-221 and 355-153 or 355-156. FWS	375-210	3 Credits	Government Functioning of governmental units in the U.S.A. Political principles, processes, problems; constitutional principles. Comparison of selected foreign governments. FWS GES/BSCI POLS
372-349	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS	375-220	3 Credits	State and Local Government State and local governments within U.S. federal system. Recommended: 375-210.
372-380	3 Credits	Electromagnetic Fields Development and application of the theory of electromagnetic fields; analysis of the electromagnetic properties of materials and Maxwell's equations. P: 372-282 or 372-242, 355-255 or concurrent registration. F	375-249	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS
372-449	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$ FWS	375-260	3 Credits	Problems of U.S. Foreign Policy Analysis of U.S. foreign policy objectives and decision making; problems of national defense, third world relationships, economic and resource policies, presidential/congressional authority, intelligence operations and public opinion.
			375-270	3 Credits	Introduction to Comparative Government Analysis and comparison of basic political principles, institutions and problems of major western, communist and underdeveloped nations; consideration of alternative approaches to political order and change.

375-310 3 Credits

Political Parties and Elections

Analysis of modern political parties. nominating methods, campaigns, elections. Practical politics in legislative bodies; machines and bosses.

P: 375-210. F

375-340 3 Credits

International Relations

World survey of conditions determining power relationships: balance of power, collective security and deterrence; role of international organizations in world politics. FW

375-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

375-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

375-510 3 Credits

Public Policy Analysis

Analysis of origins of public policy and policy-making process. Specific case studies of public policy. P: 375-210 or consent of instructor. FW

375-550 3 Credits

Politics and Technology

Contemporary and future technological innovations; relationship between political institutions and promotion, regulation and impact of industry and technology in the United States and other selected countries.

P: junior standing or senior standing. W

Sociology

387-110 3 Credits

Introductory Sociology

Social interaction in human groups; relationships between individual and group; basic institutions; social change and current trends. FWS

GES/BSCI SOC

387-205 3 Credits

Introduction to Social Work

Social work as a profession; history and philosophy of social services; information for teachers, counselors and those interested in the field. P: 387-110. FW

387-215 3 Credits

Sociology of the Family

The family as an institution; history, variations in other cultures, relationships to other institutions, interactions of members at various stages of life cycle.

P: 387-110. FW

387-249 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

387-250 3 Credits

Social Psychology

Theory and application of social interaction; emphasis on communication.

P: 387-110. W

387-275 3 Credits

Sociology of Sex Roles

Sociological analysis of social roles played by the sexes. P: 387-110. F

387-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

387-420 3 Credits

Child and Family Agencies

Social and legal status of children in American society; various social services designed to optimize child's growth and development; nature and needs of families; family service agencies. FW

387-430 3 Credits

Social Casework Methods

Dynamics of social casework: mobilizing individual capacities and community resources to promote adjustment between client and environment; social change. P: 387-205. W

387-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. \$ FWS

387-515 3 Credits

Criminology

Sociological analysis of structure and function of criminal law, variables of criminal behavior and operation of criminal justice system. P: 387-110. W

387-525 3 Credits

Sociology of Leisure

Institutional approach to effects of leisure on social structure; values reflected in leisure; problems with increase in leisure resources. P: 387-110. W

387-530 3 Credits

Sociology of the Community

Community structure, chiefly in the United States; variability and current trends, research techniques, community development. P: 387-110.

387-540	3 Credits	Sociology of Work Human behavior in various types of employment and occupations; trends in U.S. occupational structure. P: 387-110. FW ES-C
387-550	3 Credits	Sociology of Technology Relationships between technology and social structure with emphasis on future projections. P: 387-110. FW
387-560	3 Credits	Sociology of Juvenile Delinquency Definitions of and trends in deviant behavior among youth; research findings; efforts in prevention, control and treatment. P: 387-110. F
387-575	3 Credits	Sociology of Minority Groups Social/psychological aspects of interaction between majority and minority groups; trends among minorities in the united states. P: 387-110. W ES-A
Speech		
391-100	2 Credits	Fundamentals of Speech Techniques of effective speech: diagnosis of individual needs and training in necessary skills; speaker/listener relations, speech organization, voice, bodily action, language and development of confidence and poise. FWS GECOMMSK SPK
391-101	1-2 Credits	Forensics Training in speech through instruction in and application of the principles used in intercollegiate forensics program: oral interpretation and original and limited-preparation events. R FW
391-102	1-2 Credits	Forensics Training in speech through instruction in and application of the principles used in intercollegiate forensics program: oral interpretation and original and limited-preparation events. R FW
391-103	1-2 Credits	Forensics Training in speech through instruction in and application of the principles used in intercollegiate forensics program: oral interpretation and original and limited-preparation events. R
391-104	1-2 Credits	Forensics Training in speech through instruction in and application of the principles used in intercollegiate forensics program; specific emphasis on forensics administration. R
391-131	.5-1 Credit	Theater Practicum Participation in acting, stagecraft, lights, sound, makeup, costumes, properties and business in university theater productions. R FW GEHUMART CR/PRF
391-200	2 Credits	Persuasive Speaking Advanced techniques of speaking; develop skill in audience analysis, speech composition and delivery of various types of speeches; recognize techniques used daily toward individuals and groups. P: 391-100. FW GECOMMSK SPK
391-202	2 Credits	Oral Interpretation Individual and group activities to develop skill in the oral performance of literature; projects in analysis and delivery of literature. Consideration of individual problems. P: 391-100. W GEHUMART CR/PRF
391-204	2 Credits	Techniques of Group Leadership Techniques for presiding at meetings through use of parliamentary law; persuasion as means of motivating and guiding behavior of others. P: 391-100. FW
391-206	2 Credits	Discussion Principles and techniques of discussion; leading and participating in symposium, panel, roundtable and other discussion forms. P: 391-100. FWS GECOMMSK SPK
391-208	3 Credits	Theory of Communication How people communicate with each other; interpersonal, social, technical and business communication, monographs of various communication theorists. P: 391-100. FW GECOMMSK SPK
391-210	1-2 Credits	Interpersonal Speech Communication Basic aspects of non-structured, informal speech communication; expression of feelings and intentions and processing of relationships. P: 391-100. FW GECOMMSK SPK
391-232	3 Credits	Introduction to the Theater Development of theater arts from ancient times to present; play styles, production methods and audience appreciation; representative plays. FW GEHUMART CR/PRF
391-236	2 Credits	Listening Theoretical analysis and practical application of listening concepts. Emphasis on assessment of individual listening skills and methods of improving personal listening techniques used in occupational and personal relationships. P: 391-100. FWS GECOMMSK SPK
391-249	1-8 Credits	Cooperative Education Program in Liberal Studies Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: consent of instructor or department chair. \$
391-310	2 Credits	Introduction to Speech Correction Nature and causes of and therapeutic methods for remediating speech and language disorders. P: 391-100.

391-334 2 Credits

Contemporary Theater

Analysis of selected plays; structure, dramatic content and production methods. **P:** 391-100. **W** GEHUMART CR/PRF

391-336 2 Credits

Stagecraft and Scene Design

Technical problems in producing plays; set design; constructing, painting and handling scenery; stage lighting, makeup, costuming, sound and visual effects, organization of production staff. **P:** 391-232. **W** GEHUMART CR/PRF

391-338 2 Credits

Play Production

Directing and acting techniques in play production; selecting, rehearsing and producing scenes for class. **P:** 391-100. **F** GEHUMART CR/PRF

391-349 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$**

391-412 2 Credits

Teaching Speech in Middle and Secondary Schools

Preparation for the teaching of speech communication courses and the direction of related co-curricular activities in middle and secondary schools.

P: 391-100 and speech teaching minor, or consent of speech minor adviser.

391-449 1-8 Credits

Cooperative Education Program in Liberal Studies

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$**

391-508 2 Credits

Speech Skills for Business and Industry

Technical speaking, projects in application of speech skills and activities in business and industry. **P:** 391-100 and junior standing. **FW**

391-514 1 Credit

Interviewing

Principles and techniques for interviewee in employment interviews.

P: 391-100. **FW**

391-554 3 Credits

Television Programming and Performance

Planning, writing and performing instructional, public service, special feature or dramatic television programs.

P: 391-100 and junior standing or consent of instructor. **W** GEHUMART CR/PRF

Counseling

413-405 3 Credits

Peer Counseling

Laboratory experience will train class participants to be peer counselors and trainees for peer groups that counsel among themselves using skills in listening, giving support and providing alternatives through verbal and non-verbal interaction. **FW**

413-444 2 Credits

Introduction to Group Processes

Principles of group processes and the appropriateness of their application in various settings.

413-501 2 Credits

Introduction to Guidance

Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors. **FWS**

413-571 2 Credits

The Psychology of Marriage and the Family

A study of the interpersonal relations involved in dating, mating and family collaboration with growing awareness of patterns for self-integration. **FW**

413-600 1-3 Credits

Workshop: Counseling/Psychological Services

Current specialized topics studied through experiential activities.

P: consent of instructor. **R FS**

413-600A 1-3 Credits

Workshop: Counseling/Psychological Services

Current specialized topics studied through experiential activities. Continuation of course 413-600. **R FS**

413-600B 1-3 Credits

Workshop: Counseling/Psychological Services

Current specialized topics studied through experiential activities. Continuation of course 413-600. **R FS**

413-629 2 Credits

Guidance in the Elementary School

Nature and conditions of guidance in elementary schools; curricular and non-curricular guidance techniques, referrals, parent counseling; guidance principles and practices applied to elementary school child. **WS**

413-634 2 Credits

Technical/Vocational Education Student

Characteristics of vocational/technical student affecting social, physical, emotional and intellectual development in adolescent-to-young-adult transition; implications for guidance, counseling and vocational education. **FW**

413-647 2 Credits

Behavior Problems of Children

Psychological, social and environmental factors contributing to developing child's behavior; cause and treatment of behavioral disorders in children 3 through 12; methods of observing, diagnosing, documenting and interpreting; underlying behavioral dynamics of problem children. **P:** consent of instructor. **WS**

413-666 2 Credits

Alcoholism and Family Systems Intervention

The role of alcoholism in the family and how to intervene therapeutically. **WS**

413-675 2 Credits

Counseling Theory

Theoretical approaches to counseling: psychoanalytic adaptations, behaviorism, trait-factor, client-centered and others; nature of man, underlying personality theory, goals of counseling, role of counselor and illustrative practical applications in each approach; develop beginning personal theory of counseling. **P:** 413-501. **FWS**

413-694 2-3 Credits

Counseling Older Persons

Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences. **W**

Education

421-280 1-2 Credits

Reading Improvement

Skill instruction in reading study skills. Application of skills to student's textbooks and materials.

421-303 3 Credits

Educational Psychology

Introduction to the psychological aspects of the educative processes. Emphasis on application of basic psychological principles to teaching. Focus on learner, learning process, and the teacher as an agent for change.

P: 479-110. **FWS**

421-305 2 Credits

Teaching Practicum

Practical experience in developing the prospective teacher's ability in specific, well-defined teaching skills. **P:** 421-205. **FWS**

421-310 1 Credit

Field Experience - Tutoring

Supervised one-on-one or small group teaching experience in a school or other educational setting in response to the special needs of students with learning difficulties. Emphasis is on precision teaching, individualized instruction, and alternative strategies. **P:** consent of instructor. **FWS**

421-312 2 Credits

Introduction to Curriculum, Methods and Assessment

Principles and practices of curriculum development, instructional methods, and measures of assessment of learning including issues of and approaches to curriculum and curriculum development; methods of effective teaching; purposes, methods and measures of assessment. **FW**

421-326 2 Credits

Foundations of Education

Historical background, status, trends and organization of U.S. education; understandings vital to students before they begin student teaching. Includes professional roles, expectations, rewards and frustrations, resources, control, finance and philosophy. **FWS**

421-405 8 Credits

Student Teaching

Experience in applying the theories and skills involved in teaching and learning under the guidance of a master teacher in selected off-campus schools.

P: 421-305, 421-507, 421-536, 421-641; overall grade point average of 2.25; satisfactory health, speech and English. **FW**

421-406 8 Credits

Intern Teaching

An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester.

P: 421-305, 421-507, 421-536, 421-641; overall grade point average of 2.25; satisfactory health, speech and English. **FWS**

421-408 4 Credits

Introduction to Teaching Strategies

Introduction to general curriculum development, instructional methodology and evaluation.

421-438 2 Credits

Curriculum Development

Intensive study and practice of the procedures involved in course construction culminating in a course of study appropriate to the student's major or minor.

421-495 2 Credits

Personal Learning Experience

An experimental program for juniors and seniors, by permission of program directors. Each student selects an area of life which involves ethical decision and investigates that decision-making process. The group enrolled for this experience meets with the directors twice a week for direction, discussion, and criticism. Self-evaluation paper at the close of the course, which is submitted to the critique of the directors and other members of the learning experience.

421-502 3 Credits

Global Perspectives for Educators

Primarily for education students interested in introducing global perspectives into the classroom. The methodology, materials and instructional strategies necessary for effective implementation of global education in schools and individual classrooms will be covered. **FW**

421-507 2 Credits

Applied Human Relations

An experiential course focusing on major themes affecting human relations. **FWS ES-C**

421-536 2 Credits

Multiculturalism: Issues and Perspectives

Intensive study of diversity in U.S. schools. Examination of the educational needs of students from various ethnic, cultural, religious, language and social class groups. Discussion of issues related to racism, sexism and oppression.

P: qualifies as ethnic studies category A only if 421-576 is also taken. **FWS ES-A**

421-574 1-2 Credits

Clinical Field Experience - Mentoring

Supervised one-on-one or small group teaching experience in a school or other educational setting in response to the special needs of high-ability students. Emphasis is on critical thinking, problem-solving skills and creative expression.

P: 431-595 or consent of instructor. **FWS**

421-576 1 Credit

Field Experience – Cross-Cultural Experience

Supervised one-on-one or small group experience in a school or other setting in response to a special academic or social need with representatives of one or more of the following designated ethnic minority groups—African-Americans, Asian-Americans, Pacific Islander-Americans, American Indians and Hispanic-Americans; and various socio-economic groups, specifically the low-income. **P:** 421-536 or consent of instructor. Qualifies as ethnic studies category A only if 421-536 is also taken. **FWS ES-A**

421-580 3 Credits

Reading and Language Arts in Elementary Education

Current philosophies in reading and language arts education, the centrality of language arts to the elementary curriculum and methodologies for the elementary classroom. **FWS**

421-581 1 Credit

Preclinical: Elementary Education Language Arts, Reading

Supervised teaching experience in developing the prospective teacher's ability in elementary education language arts and reading skills.

P: 421-580, concurrent registration. **FWS**

421-582 2 Credits

Secondary Reading and Language Development

Effective utilization of reading and language development methodologies in secondary content area classrooms. **P:** 421-303. **FWS**

421-600 1-3 Credits

Workshop – Special Topics in Education

Current specialized topics studied through experimental activities.

P: consent of instructor. **R**

421-600A 1-3 Credits

Workshop – Special Topics in Education

Current specialized topics studied through experimental activities.

P: consent of instructor. **R**

421-615 2 Credits

Educating At-Risk Students

Characteristics, needs, assessment procedures, alternative curricula and methods, intervention, and management strategies for at-risk students.

421-641 2 Credits

Education Evaluation

Testing, the interpretation of tests by means of simple statistical procedures, methods of evaluating educational programs.

421-683 1 Credit

Seminar in Reading Methods for Secondary Schools

Selection, research and presentation for discussion of topics related to reading in secondary schools. **FWS**

421-690 2 Credits

Learning Style Theory and Application

An introduction to the educational sciences, including cognitive mapping. Emphasis is placed on the practical application of the educational sciences in an educational setting. **P:** junior standing.

Special Education

431-480 4-8 Credits

Student Teaching With Handicapped Youth

Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents.

P: 431-662, 2.5 grade point average in major courses, "C" or better in English, and speech and health certification. **FW**

431-481 6 Credits

Student Teaching Youth with Cognitive Disabilities

Directed teaching and community experiences in selected off-campus schools with cognitive disabilities for a full school semester. **P:** admission to advanced standing, including 431-518, 431-526 and 431-662. **FW**

431-500 3 Credits

Introduction to Individuals with Cognitive Disabilities

Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons. **F**

431-501 3 Credits

Learning Disabilities

Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults. **W**

431-516 2-3 Credits

Psychology of the Exceptional Child

History and treatment of exceptional individuals; characteristics and development of children who deviate from the norm: learning disabled, gifted, mentally retarded, socially and emotionally disturbed, abused, speech and language impaired, and those with visual, hearing, orthopedic and chronic health problems. **FW**

431-518 2 Credits

Introduction to Teaching/Assessment in Special Education

Provides one-on-one, supervised experience in teaching youth with exceptional education need (EEN). Provides the initial opportunity for the student to teach a young person with EEN in a supervised setting for 50 hours. **FWS**

431-522 2 Credits

Curriculum and Instruction: Functional Living Skills

Curriculum and instructional techniques for developing basic functional living skills for persons with cognitive disabilities, borderline and severe.

P: 431-518, 431-500 and 431-630 or consent of instructor. **W**

431-523 3 Credits

Curriculum and Instruction: Academic Skills

Curriculum and instructional techniques for developing academic skills for persons with cognitive disabilities, borderline and severe.

P: 431-518, 431-630 and 431-500 or consent of instructor. **FW**

431-524 3 Credits

Curriculum and Instruction: Career and Transition Education

Curriculum and instruction for persons with cognitive disabilities, borderline and severe, in prevocational career, vocational education, and transition stressing interdisciplinary cooperation.

P: 431-518, 431-500 and 431-630 or consent of instructor. **F**

431-526	2 Credits	Practicum in Special Education Off-campus work and study in educational settings with youth with cognitive disabilities borderline (CBB) and/or cognitive disabilities severe (CDS) for a minimum of 50 hours in a supervised setting, utilizing the teaching techniques and methods previously learned. P: 431-518 and/or concurrent enrollment in 431-524. F	431-630	3 Credits	Mainstreaming Students with Exceptional Educational Needs Behavior and learning characteristics of persons who are cognitively disabled, learning disabled, socially and emotionally disturbed, hearing and sight impaired, orthopedically and chronically health impaired, speech and language impaired, gifted and talented, or who suffer from traumatic brain injury, autism, attention deficit disorder, attention deficit hyperactivity disorder; services mandated by federal and state law, M-team process, and individualized educational plan; transitional services; instruction of students with exceptional educational needs within regular classes. FWS
431-528	3 Credits	Assessment for Individual Education/Transition Plans Diagnosing behavior and learning problems of students with exceptional education needs. Preparing individual educational and transitional plans based on comprehensive assessments. P: 459-610 and/or concurrent enrollment. FWS ES-C	431-662	3 Credits	Classroom Management Techniques Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning. W
431-581	2 Credits	Legal Rights of Handicapped Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. W	Vocational Rehabilitation		
431-595	2 Credits	Introduction to Gifted Education Characteristics of gifted, creative and talented individuals; identification in educational settings; social, psychological and educational aspects of providing for the gifted throughout school years. S	459-101	3 Credits	Introduction to Rehabilitation An introduction to serving people with disabilities. philosophy, history, legislation, concepts and processes, and careers in rehabilitation services. FW
431-597	2-4 Credits	Field Experience in Gifted Education Off-campus experience in gifted student programming in schools, parent organizations, private organizations, extracurricular organizations, or state and federal agencies. Students may enroll for 2 or 4 semester hours of credits for a final total of 4. P: 431-595. R	459-102	3 Credits	Community Resources Role of community resources in rehabilitation. FW
431-601	2 Credits	Identification of the Gifted Examines characteristics of, and methods for the identification of, gifted and/or creative students. P: 431-595. FWS	459-198	1-2 Credits	Field Experience in Rehabilitation Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. P: 459-101. R FWS
431-602	2 Credits	Psychosocial Education of the Gifted Examination of psychosocial characteristics, needs and problems as manifested by high ability students, and consideration of strategies appropriate for enhancing mental health in the gifted and talented in the school setting. P: 431-595. FWS	459-205	4 Credits	Rehabilitation Practicum Direct experience working with persons with disabilities and members of the helping professions in rehabilitation settings. P: 459-101, 459-102. FW
431-605	2 Credits	Curriculum Development for the Gifted General principles of curriculum development for the gifted. Procedures and suggestions for developing an original program. Guidelines for meeting the needs of special populations of gifted. Teaching/learning strategies used in gifted education. P: 431-595 or consent of instructor. FWS	459-230	3 Credits	Psychosocial Aspects of Disability Subjective, objective, ethnic/cultural, and environmental factors related to the disability experience. P: 459-101 and/or concurrent with 308-220. FW ES-C
			459-298	1-2 Credits	Field Experience in Rehabilitation Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. P: 459-101. R FWS
			459-310	4 Credits	Vocational Evaluation Vocational evaluation methods: work samples, psychometric testing, job site evaluation, and situational assessment. Use of occupational information resources in planning, decision making, staffing and report writing. P: 459-101, 459-102. FW

459-325 3 Credits
Rehabilitation and Sensory Disability
 Introduction to persons with hearing and visual impairments or both. Methods and techniques used in sensory disability rehabilitation are discussed.

459-398 1-2 Credits
Field Experience in Rehabilitation
 Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. P: 459-101. R FWS

459-401 2 Credits
Principles and Techniques of Caseload Management
 Principles and techniques of implementing case load management in service of clients of state vocational rehabilitation counseling agencies or rehabilitation facilities. P: 459-230, 308-220. FW

459-410 3 Credits
Job Placement Processes
 Placement theory and methods used to assist people with disabilities to obtain appropriate employment. P: 459-230. FW

459-449 1-6 Credits
Rehabilitation Cooperative Education Experience
 Work and study in an approved rehabilitation related position to gain experience in provisions of human services. Selection by application and interview. P: field experience and consent of instructor. \$ R

459-480 2-6 Credits
Advanced Rehabilitation Practicum
 Advanced experience in service delivery to persons with disabilities in varied agency/service settings related to student's designated rehabilitation concentration. P: 459-205. FW

459-498 1-2 Credits
Field Experience in Rehabilitation
 Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers. P: 459-101. R FWS

459-500 1-2 Credits
Special Topics in Rehabilitation
 Special topics not available through regular courses. P: consent of instructor. R FWS

459-500A 1 Credit
Applied Biofeedback in Rehabilitation

459-500B 2 Credits
Juvenile Use/Abuse of Alcohol and Other Drugs

459-500G 1 Credit
Grantsmanship in the Helping Professions

459-500M 1 Credit
Psychophysiological Approaches to Chronic Muscle Problems in Athletics
 To enable individuals to develop skills in several psychological and somatic treatments for problems of chronic muscle tension in athletic settings.

459-500N 1 Credit
Community-Based Rehabilitation Services
 An examination of national priorities for community-based services designed to enhance competitive employment options for severely disabled persons. F

459-505 3 Credits
Sign Language I
 Basic course in manual communication with persons who are deaf. Intensive practice in expressive and receptive communication. F GECOMMSK LNG

459-506 3 Credits
Sign Language II
 Intermediate course in manual communication with persons who are deaf. American sign language and increasing sign vocabulary and communication speed. P: 459-505. W GECOMMSK LNG

459-509 3 Credits
Introduction to Biofeedback
 Theory and applications of biofeedback in psychology, rehabilitation, medicine and education; in-depth review of the field; appropriate uses of biofeedback as a referral possibility; preparation for supervised clinical biofeedback experience. P: 479-110.

459-510 3 Credits
Clinical Biofeedback Laboratory
 Development of clinical skills and familiarization with laboratory monitoring devices and stress management techniques, as they apply to the training of clients in a clinical biofeedback setting. The course also reviews current clinical research, future directions for the field and ethical considerations. P: 308-220, 413-405, 459-509 and consent of instructor.

459-520 3 Credits
Rehabilitation and Chemical Dependency
 Chemical use and abuse with emphasis on the rehabilitation of persons who are chemically dependent and the historical and sociological implications of drug usage. W

459-525 3 Credits
Rehabilitation of Public Offenders
 Emphasis on programs designed to rehabilitate persons who are public offenders and sociological issues connected with the judicial system. F

459-550 2 Credits
Independent Living
 An overview of independent living programs in this country including evolution, goals, methods of service delivery, and management of the independent living program. W

459-555 2 Credits
Rehabilitation of the Older Disabled Worker
 Develop awareness and understanding of older disabled workers with a focus on implementing rehabilitation planning that enables continued participation in the work force or reinsertion into it following disability. W

459-558 2 Credits
Rehabilitation Support System Networking
 Services, eligibility and appeals process of agencies and community organizations that create formal support systems for persons with special needs; the role of interagency collaboration, informal networks and coalitions that create advocacy channels. W

459-560 2 Credits

Technological Applications: Rehabilitation Services

Applications of technology to assist persons with disabilities in vocational and independent living situations using rehabilitation engineering principles/processes. Review of commercially available aids and assistive devices, and alternative control/interfacing procedures. Introduction to problem solving/design process as related to persons with disabilities. **FW**

459-565 2 Credits

Laboratory in Rehabilitation Technology

Experience utilizing technological aids/devices developed for persons with disabilities. Modify/adapt equipment to meet specific functional requirements. Construct switch/control mechanisms for equipment. Develop prototype solutions to vocational and independent living problems.

P: 459-560 or consent of instructor. **FW**

459-585 2 Credits

Rehabilitation and Mental Retardation

Background in mental retardation; vocational evaluation, adult education and adjustment techniques used with adults who are mentally retarded. **\$ FW**

459-587 3 Credits

Management of Employees with Disabilities

Orientation to workers with disabilities in business and industry. Focus is upon the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of workers with disabilities. Governmental requirements, linkage between business and rehabilitation community resources, and staff development are emphasized.

P: junior, senior or graduate standing.

459-598 1-2 Credits

Field Experience in Rehabilitation

Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers.

P: 459-101. **R FWS**

459-601 2 Credits

Rehabilitation in the Private Sector

Introduction to the private-for-profit sector of rehabilitation. Orientation to the contractual services offered by practitioners. Industrial in-plant models will be contrasted to other models for providing rehabilitation services to workers with disabilities. **F**

459-602 3 Credits

Rehabilitation Program Operations

Principles and practices in the operation of community rehabilitation programs. Emphasis on knowledge of laws, programs, organizational structures, accreditation standards, consumer services, physical plant management, budgeting practices, and strategies for program evaluations.

P: 459-201, 459-202, 459-301, 459-601; senior standing. **W**

459-605 2 Credits

Microcomputer Applications in Rehabilitation

Applications of microcomputer technology and adaptive devices in vocational evaluation, work adjustment, placement and administration. **FW**

459-610 2 Credits

Psychological Testing – People with Exceptional Need

Introduction to psychometric tests; administration, interpretation/scoring and applications for persons with exceptional needs. **P:** 459-230. **FWS**

459-661 2 Credits

Forensics for the Rehabilitation Professional

Orientation to terminology and practices associated with private sector rehabilitation. Materials specific to working with insurance/litigation cases.

P: 308-132. **W**

459-670 2-3 Credits

Work Adjustment Services

Principles and procedures of adjustment services. Emphasis upon the change and improvement of behavior. Supervised practical experience in interviewing, behavior observation, individual work adjustment planning, lesson plan development and report writing. **P:** 459-101 or graduate standing. **FW**

459-675 3 Credits

Cognitive Rehabilitation

Cognitive functioning and rehabilitation concepts applied to the delivery of public and private human services. Covers remediation, placement and evaluation of specific consumer needs related to traumatic brain damage, stroke, and brain deterioration associated with aging. **W**

459-680 3 Credits

Principles of Rehabilitation Counseling

Theory and application of counseling processes in rehabilitation settings.

P: 479-561 or 431-516. **FWS ES-C**

459-682 2 Credits

Sexuality and Disability

Investigate sexuality as an integral part of the disability experience. Explore programs, techniques and personal biases in relation to sexuality of persons with disabilities. **F**

459-685 2 Credits

Group Processes in Rehabilitation Settings

Theory and application of group processes in rehabilitation settings; direct experience as member and facilitator of a group.

P: 459-680. **F**

459-688 2 Credits

Advanced Job Placement

Job placement methods for persons with disabilities. Development of employer account systems and the marketing of job placement services. Use of job readiness scales, development of individualized placement plans, and job seeking skills training programs. Current research in job placement will be assigned and discussed. **P:** 459-410 or consent of instructor. **W**

459-698 1-2 Credits

Field Experience in Rehabilitation

Off-campus work and study in an approved position to better understand the challenges and potentials of various rehabilitation type careers.

P: 459-101. **R FWS**

Physical Education and Athletics

466-101 1 Credit

Discovering Wellness

Introduction to the components and benefits of high level wellness; includes self-assessment and the development of an action plan for lifetime wellness.

FWS GEH/PE HLTH

466-102 2 Credits

Personal Health

Prevention and care of significant physiological and sociological effects of selected personal health problems in our society. **FW**

466-249 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

466-340 2 Credits

ARC Standard First Aid and Personal Safety

American Red Cross certification in standard first aid and personal safety; increase personal safety and accident-prevention knowledge; learn to administer emergency first aid to self or others. **FWS**

466-346 .5 Credits

ARC Cardiopulmonary Resuscitation

Techniques of basic life support: recognizing respiratory and/or cardiac arrest and properly administering cardiopulmonary resuscitation (CPR) to maintain life. Successful completion results in one-year certification in ARC basic life support course in CPR. **FW**

466-349 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

466-350 3 Credits

Prevention and Care of Athletic Injuries

Provides prospective physical education and/or coaching professional with basic understanding of prevention, treatment and care of athletic injuries.

P: 366-340 and 308-142 or 308-134 or 466-355. **FW**

466-355 3 Credits

Kinesiology

Body movements and principles affecting them. **P:** 308-132. **F**

466-365 3 Credits

Physiology of Exercise

Effects of exercise on sports participants: heat stress, body composition, nutrition, cardiovascular function, energy expenditure, respiratory mechanics and ventilation factors. **P:** 308-132. **W**

466-370 3 Credits

Evaluation and Recognition of Athletic Injuries

Professional preparation course for students interested in obtaining certification in athletic training. Emphasis is placed upon the acquisition of knowledge and skills required for joint and soft tissue evaluation. **P:** 466-350. **FW**

466-449 1-8 Credits

Cooperative Education Experience

Work and study in an approved position to gain business, industrial and other experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous.

P: consent of instructor or department chair. **\$ FWS**

466-490 2 Credits

Athletic Training Practicum

Practical application of training principles: prevention and care of athletic injuries, facilities direction, and program management.

P: 308-132 or 308-134, 366-340, 366-350. **R FW**

467-101 1 Credit

Aerobic Dance

Introduction to aerobic dance as a technique for the development of physical fitness. **FW GEH/PE ACTV**

467-103 1 Credit

Archery/Beginning FW GEH/PE ACTV

467-105 1 Credit

Bow Hunting

Conservation, safety, selection and care of equipment; techniques and practical bow hunting experience. **P:** 367-103 or equivalent. **F GEH/PE ACTV**

467-107 1 Credit

Badminton FW GEH/PE ACTV

467-109 .5 Credits

Basketball R F GEH/PE ACTV

467-110 1 Credit

Bicycling

Bicycling for health and fitness: safety, technique and knowledge. **FWS GEH/PE ACTV**

467-113 1 Credit

Bowling \$ FW GEH/PE ACTV

467-115 1 Credit

Canoe Techniques \$ FW GEH/PE ACTV

467-121 1 Credit

Exercise for Fitness FWS GEH/PE ACTV

467-126 .5 Credits

Football R F GEH/PE ACTV

467-132 1 Credit

Horseback Riding - Beginning Western

Western horsemanship: basic body position and control at the walk, trot and lope. **\$ FW GEH/PE ACTV**

467-133 1 Credit

Horseback Riding - Beginning English \$ FW GEH/PE ACTV

467-134 1 Credit

Horseback Riding - Intermediate English

English riding skills: serpentines and figure eights at advanced gaits, simple lead changes, side pass and turns on the forehand and haunches.

P: consent of instructor. **\$ FW GEH/PE ACTV**

467-135 1 Credit

Walking/Jogging

The philosophy, principles and skills of jogging as an exercise and health program. **FW GEH/PE ACTV**

467-136	.5 Credits	467-185	1 Credit
Karate FW GEH/PE ACTV		Volleyball R FW GEH/PE ACTV	
467-142	1 Credit	467-187	1 Credit
Outdoor Skills \$ FW GEH/PE ACTV		Weight Training FWS GEH/PE ACTV	
467-144	1 Credit	467-189	.5 Credits
Personal Defense		Wrestling R W GEH/PE ACTV	
Development of physical fitness for defense consciousness; techniques of initial and basic defense skills in weapon and rape attacks. FWS GEH/PE ACTV		467-200	1 Credit
467-145	1 Credit	Orientation to Intercollegiate Athletics	
Practicum in Intercollegiate Athletics		Introduction to intercollegiate athletics, including NCAA and conference regulations; current issues, such as professional sports, costs, drugs, Title IX, minority issues and ethics; components of athletic programs; physiology of exercise; and psychology of sport. FW	
Practical experience in intercollegiate athletics, including completion of a season as a member of an intercollegiate team.		467-241	1 Credit
P: 467-100 or consent of instructor. R FW GEH/PE ACTV		Advanced Lifesaving	
467-146	1 Credit	Red Cross training program in knowledge and skills needed to save one's own or another's life in an emergency. P: ARC swimmers level. F	
Racquetball/Beginning FW GEH/PE ACTV		467-260	1 Credit
467-147	.5 Credits	Golf	
Racquetball/Intermediate FW GEH/PE ACTV		Fundamental principles of golf; skills, history, etiquette and application of techniques. Required: play 27 holes of golf, pay greens fees, furnish three golf balls for class use. \$ FWS	
467-148	1 Credit	467-265	2 Credits
Relaxation FW GEH/PE ACTV		Physical Activities for Young Children	
467-152	1 Credit	Sequential development of physical perceptual skills in children, birth to age 5; perceptual motor activities that promote development. FWS	
Skiing \$ W GEH/PE ACTV		467-342	2 Credits
467-153	1 Credit	Water Safety Instructor	
Skiing - Cross Country		American Red Cross training course. Teaching and testing of swimming, lifesaving skills and knowledge of water safety; theoretical and practical knowledge and assistance in teaching of Red Cross lifesaving and water safety courses. P: 367-241. W	
Selection of equipment, waxing, flatland, uphill and downhill techniques and touring experiences in Nordic skills. \$ W GEH/PE ACTV		467-345	1 Credit
467-159	.5 Credits	Basketball Officiating	
Softball R W GEH/PE ACTV		Rules and officiating techniques for men's and women's basketball; preparation for DGWS and/or WIAA officiating certifications. P: consent of instructor. F	
467-163	1 Credit	467-346	1 Credit
Swimming/Beginning FW GEH/PE ACTV		Football Officiating	
467-165	1 Credit	Application of football officiating rules and techniques. P: consent of instructor. F	
Swimming/Intermediate FW GEH/PE ACTV		467-347	1 Credit
467-173	1 Credit	Wrestling Officiating	
Skin and Scuba Diving \$ FWS GEH/PE ACTV		Rules and techniques of wrestling officiating. F	
467-176	1 Credit	467-350	2 Credits
Tennis/Beginning FWS GEH/PE ACTV		Principles of Physical Education and Athletics	
467-178	1 Credit	Principles of physical education based on scientific facts and educational ideals; aims and objectives of physical education at various school levels. W	
Tennis/Intermediate R FWS GEH/PE ACTV			
467-180	.5 Credits		
Track and Field R W GEH/PE ACTV			
467-182	1 Credit		
Tumbling			
Lab course to develop tumbling skills: forward, backward and sideways rotational, springing and vaulting movements from hands and feet; basic to advanced aerial tumbling. W GEH/PE ACTV			

467-360	2 Credits	Problems in Athletics Identification, interpretation and discovery of solutions for problem areas in athletics: human relationships, intellectual strategies, competitive unity, sex discrimination and sport characteristics. W	467-480	2 Credits	Coaching Youth Athletes Coaching strategies for organized non-varsity youth sports programs--philosophy, psychology, physiology, pedagogy, prevention and care of injuries, and legalities. F
467-401	2 Credits	Coaching Gymnastics Elements of gymnastic tumbling and use of gymnastic apparatus as part of a modern physical education program. F	467-490	1-3 Credits	Practicum in Coaching On- or off-campus work and study in athletic coaching with competitive teams. P: completion of coaching course in area of practicum. FW
467-450	2 Credits	Organization/Administration of Physical Education Everyday problems encountered by physical education instructors, relationship of physical education to general education, objectives of physical education, utilization, planning and care of facilities and equipment; time allotment, classification of activities and children, leadership, organization, supervision, routine procedures. F	Psychology		
467-460	2 Credits	Coaching Basketball Fundamentals and methods of teaching and coaching basketball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. F	479-100	1 Credit	Psychology Seminar I - Foundations An orientation activity for all students in their initial semester as a psychology program student. Information concerning psychology as a discipline, applied profession, and liberal arts program is presented. Career and graduate training opportunities are reviewed. Students continue enrollment in the seminar until they have completed 479-100, 120, 150 and 190, and have gained approval for their individual program plan.
467-461	2 Credits	Coaching Football Fundamentals and methods of teaching and coaching football, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W	479-110	3 Credits	General Psychology An introduction to psychology as a discipline and applied science. Emphasis is placed on scientific methodology as it is applied to behavior, learning, memory, perception, motivation, development, individual differences, mental health, the physiological basis for behavior, and on the application of psychological principles to human experience. FWS GES/BSCI PSYC
467-470	2 Credits	Coaching Baseball Fundamentals and methods of teaching and coaching baseball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W	479-150	3 Credits	Humanistic Psychology The course will address the question of "Who am I?" from a contemporary horizon where concerns of psychology intersect biology, philosophy, sociology, anthropology, history and religion. From there we move toward possible answers to man's perennial questions about himself and his future through readings and discussions of key works. The overall objective of the course will be to help the student construct, for himself, a viable answer to the classical question, "Why am I?". FWS
467-471	2 Credits	Coaching Track and Field Fundamentals and methods of teaching and coaching track and field, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications. W	479-190	4 Credits	Psychological Research Methods An introduction to research methods used in the behavioral sciences. Lecture and laboratory activities involve applications of methodologies and computer technologies to understand and produce research compatible with American Psychological Association standards. FW
467-477	2 Credits	Coaching Tennis Coaching strategies; philosophy, communication, motivation, diet, training and conditioning, singles and doubles. Budgets, competition planning and evaluation techniques are included. P: varsity tennis experience or consent of instructor. W	479-210	3 Credits	Introduction to Applied Psychology Introduction to the application of psychological theories, methods of investigation, and research findings to a diverse spectrum of social problems. Emphasis is placed on the use of scientific psychology to improve aspects of everyday life. P: 479-110. FW ES-B
467-478	2 Credits	Coaching and Officiating Volleyball Skills and techniques of coaching and officiating competitive volleyball. P: 367-185 or one year competitive volleyball. F	479-249	1-8 Credits	Cooperative Education Experience in Psychology Work and study in an approved off-campus position to gain professional, business and industrial experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: junior standing and consent of instructor and grade point average of 2.5 or better, enrollment in the Psychology program. \$ R
467-479	2 Credits	Coaching Wrestling Philosophies and methods of teaching and coaching wrestling skills; organization and administration of competitive wrestling programs; and theories of wrestling coaching strategies. F			

479-251	3 Credits	Child Psychology A study of the total psychological development of children emphasizing age groups spanning the preschool and prepubescent child, and methods for scientific measurement and understanding of child behavior. P: 479-110. FWS	479-400	1 Credit	Psychology Seminar III The final seminar for psychology program students. Attention is given to the transition to graduate school and/or employment by students. Students develop and conduct an original investigation and report their findings in a formal research paper as a demonstration of their achievement of program competencies. P: 479-300. FWS
479-270	3 Credits	Social Cognition and Behavior Social factors affecting the behavior, thought processes and attitudes of individuals. Includes attitude assessment and change, prejudice, interpersonal attraction, social influence, aggression, cognitive biases and attributions. P: 479-110. FWS	479-449	1-8 Credits	Cooperative Education Experience in Psychology Work and study in an approved off-campus position to gain professional, business and industrial experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: junior standing and consent of instructor and grade point average of 2.5 or better and enrollment in the Psychology program. \$ R
479-281	3 Credits	Environmental Psychology Psychological aspects of person/environment interaction. People impacts on environment, and environmental impacts on people. Aspects of recreational environment, population density and stress factors. P: 308-122 or 308-150.	479-451	3 Credits	Children's Learning Psychological study of basic learning processes in infants and young children. How and why learning occurs and how the course of learning can be modified; discussed from theoretical, research, and practical orientations including simple behavioral responses, concepts and language. P: 212-124 and 479-110. F
479-298	2 Credits	Psychology Field Experience Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.	479-460	3 Credits	Personality and Mental Health An introduction to the areas of psychology which are concerned with the recognition of the positive principles of mental health and their application to human behavior. In addition, an examination is made of a variety of theories which are representative of the major views of leading thinkers on the subject of personality and personality development. FW
479-300	1 Credit	Psychology Seminar II The second level of seminar for psychology program students. Activities center on sharing knowledge and experience among faculty and students and on an assessment of the development of program level competencies by students. P: 479-100. FWS	479-480	1 Credit	Individual Research Project I Preliminaries of active research through the development of a research proposal which includes the problem statement, review of the literature and the design of the research project. P: 479-210 and 479-390.
479-349	1-8 Credits	Cooperative Education Experience in Psychology Work and study in an approved off-campus position to gain professional, business and industrial experience. Normally entails recurring, supervised work periods, each one building and expanding on the previous. P: junior standing and consent of instructor and grade point average of 2.5 or better, and enrollment in the Psychology program. \$ R	479-481	1 Credit	Individual Research Project II Research in a personal area of interest within the behavioral sciences. Requirements include the completion of a research report which meets American Psychological Association guidelines. P: 479-480.
479-390	4 Credits	Experimental Psychology Experimental research methods used in basic and applied areas of psychology. Methodological issues introduced in context of actual research problems for integrated treatment of content and methodology. Students will apply this knowledge by participating in laboratory activities and designing and conducting their own experiments. P: 354-130 and 479-190.	479-483	2 Credits	Human Resource Development Foundation of human resource selection and development in the business and industrial setting. The sub set of personnel management concerned with staffing, orientation, appraisal, development, counseling, and compensating employees constitute the major topics of study. P: 479-110 or 479-150 and 150-150. FWS
479-398	2 Credits	Psychology Field Experience Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.	479-484	2 Credits	Introduction to Behavior Modification An introduction to the applied analysis of behavior. Emphasis is placed on the fundamentals of behavior modification, models of behavior control, and applications in a variety of settings. P: junior standing and at least three psychology courses or consent of instructor. FW

479-498	2 Credits	Psychology Field Experience Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.	479-574	2 Credits	Psychology of Women The myths and stereotypes of early psychoanalytic view of women, critical issues and events of female experience, from prenatal through adulthood, meaning of sexuality, contemporary life styles, and the meaning of aging. P: 479-110. FW
479-520	3 Credits	Psychology: Its History and Systems History of psychology and influence of early competing schools of thought: structuralism, functionalism, behaviorism, Gestalt psychology, and psychodynamic psychology. Evolution to present as a diverse behavioral science with emphasis on neobehaviorism, humanistic psychology, and cognitive psychology. P: 479-110. FW	479-577	3 Credits	Consumer Psychology Psychological principles and theories from the areas of motivation, perception, learning, attitude, information processing, personality, groups, organizational psychology, and environmental psychology are applied to the understanding of consumer behavior, consumer problems, and their solutions. P: 479-110. W
479-530	3 Credits	Psychology of Learning A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized. F	479-579	2 Credits	Public Relations Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics. FWS
479-535	3 Credits	Motivation and Emotion An experimentally oriented introduction to the fundamental principles of motivation and emotion. P: 479-110, junior standing and nine or more credit hours in psychology, consent of instructor. W	479-581	2 Credits	Industrial Psychology A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. P: 479-110. FW
479-540	3 Credits	Psychology of Individual and Group Differences Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied. P: 479-110 and one additional Psychology course or consent of instructor. ES-C	479-582	3 Credits	Human Resource Management Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation. FWS
479-552	3 Credits	Adolescent Psychology The physical, emotional, social, moral and intellectual development of secondary school youth. P: 479-110. FWS	479-598	2 Credits	Psychology Field Experience Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.
479-561	3 Credits	Abnormal Psychology A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied. FWS	479-601	1-3 Credits	Workshop - Special Topics in Psychology Current specialized topics studied in a small group setting utilizing experimental activities. P: consent of instructor. R
479-570	2 Credits	Assertive Training Procedures Training in interpersonal behavior and communications in which persons learn to defend their legitimate rights without violating the rights of others. FWS	479-603	3 Credits	Management of Employee Reward Systems Review of issues in the reward and compensation of employees and of systematic methods for the determination of employee wages, incentives and benefits. Psychological theories of motivation, external equity, job analysis, identifying compensable factors used in job evaluation, comparable worth and performance appraisal, individual salary determination. P: 479-483 or 479-582. W
479-571	3 Credits	Introduction to Health Psychology Principles of psychology applied to the promotion of health and wellness, prevention of disease, injury and premature death, psychological treatment of illness, improvement of health care, and formation of health policies. P: consent of instructor (usually requires 10 credits in Psychology). F			

479-632 3 Credits

Perception

This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques, and conduct experimentation in human information processing. **F**

479-673 2 Credits

Psychology of Stress

Nature of stress and stress-related diseases, stress in daily life, techniques for managing stress, and plans for reducing stress in personal and professional life. **FWS**

479-675 2 Credits

Right Brain

The two hemispheres of the human brain. Exploration and experience in right hemisphere modes of consciousness, through techniques such as meditation, hypnosis, drawing, guided imagery and dreaming. **WS**

479-679 2 Credits

Advanced Public Relations

Practice in planning and directing specific public relations programs, using the case problem approach. **P:** 479-579 or consent of instructor. **W**

479-685 3 Credits

Recruitment and Selection of Human Resources

In-depth examination of the processes involved in the design and implementation of procedures for selecting employees; the impact these procedures have on the organization; and recruitment, job analysis, testing methods, legal issues, selection strategies, career development.

P: 479-582 or 479-483. **W**

479-690 3 Credits

Psychological Measurement

An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions. **W**

479-693 1-3 Credits

Field Practicum in Public Relations Specialization

Opportunity to apply public relations principles in a practical setting. All course work for the Public Relations specialization must be completed prior to the practicum that serves as a capstone for the specialization. Both setting and job description must be approved by the faculty supervisor. **R FWS**

479-698 2 Credits

Psychology Field Experience

Off-campus work and study in an approved position to better understand the major concepts of psychology as they are applied to help solve and prevent human relations type problems.

School Psychology

489-601 2 Credits

Brazelton Neonatal Behavioral Assessment

Philosophy and technique of using the Brazelton Neonatal Behavioral Assessment Scale for evaluating infant personality and development.

P: consent of instructor.

Academic Affairs

500-100 2 Credits

Applied Student Leadership

Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. **FW**

500-477 1-6 Credits

International Studies

Interinstitutional credit exchange. Students complete educational experiences at recognized/accredited international institutions.

P: sophomore standing, grade point average of 2.0 or better, consent of the director of international studies. **R**

CAMPUS GUIDE



Academic/Administrative Buildings

1. Student Health Center
2. Louis Smith Tainter House
3. Administration
4. Harvey Hall
5. Bowman Hall
6. University Services
7. Communication Center
8. Ray Hall
9. Communication Technologies Bldg.
10. Fryklund Hall
11. Child and Family Study Center
12. Heating Plant
13. General Services Building
14. Stout Vocational Rehabilitation Institute
15. Library Learning Center
16. Home Economics
17. Education and Human Services
18. Memorial Student Center
19. Jarvis Hall-Technology and Science
20. Merle M. Price Commons
21. Applied Arts
22. Johnson Fieldhouse
23. Health and Physical Education
24. Burton E. Nelson Field

Residence Halls

- A. Wigen Hall
- B. Hovlid Hall
- C. Fleming Hall
- D. Jeter-Tainter-Callahan Halls
- E. North Hall
- F. Antrim-Froggatt Halls
- G. Curran-Kranzusch-Tustison-Oetting Halls
- H. South Hall
- I. Hansen-Keith-Milnes-Chinnock Halls

